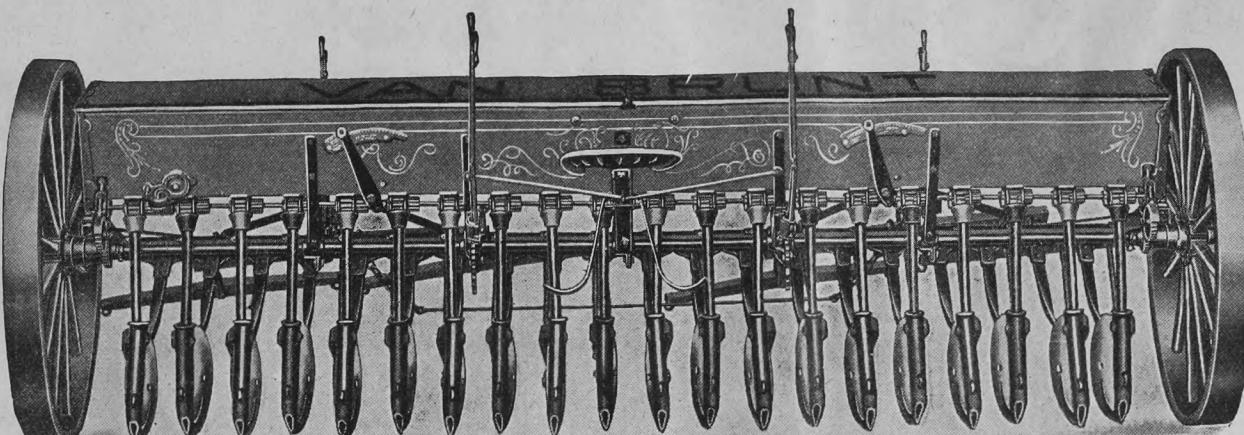


VAN BRUNT DRILL

Made in 12, 14, 16, 17,
18, 20, 22 & 24 Single,
Double Disc, and Shoe,
Interchangeable.

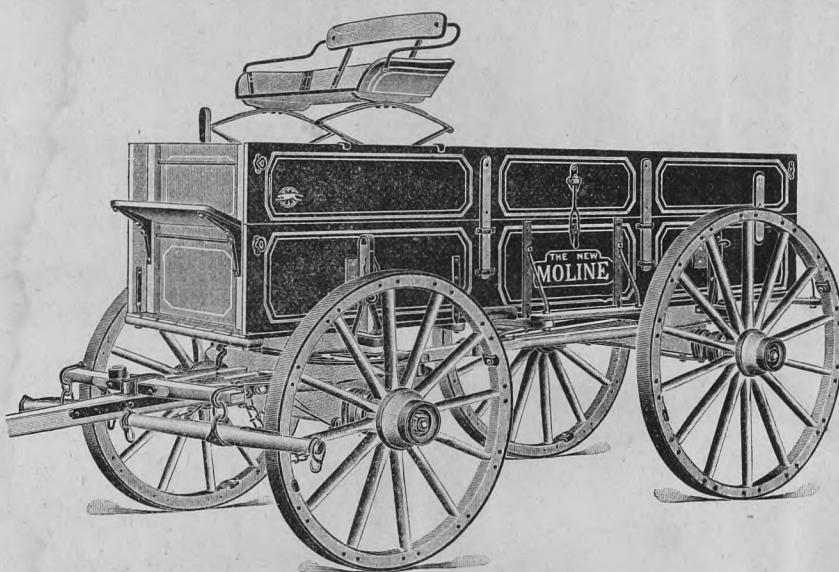


WRITE FOR
CATALOGUE.

THE parts that go to make up a Perfect Equipped and Well-Balanced Drill, you will find on the Van Brunt. Axle continuous (not stub axle to cheapen it), runs the entire length of machine. Frame is built of heavy angle Steel and is thoroughly braced, the Corners are Solid and reinforced to prevent the slightest springing or rocking. Wheels with long hubs "chilled," set well under end of frame and are dust-proof. 3-inch tire on 12, 14, 16 and 17, and 4-inch tire on 18, 20, 22 and 24 sizes.

Gear Drive (not chain), no lost motion, never wear out or bother. Both wheels are drive wheels. **Tilting Levers.** The operator can change the angle of Disc or Shoe while machine is in motion. The Tilting Lever is as great a necessity to a **Grain Drill** as a Tilting Lever is to a Mower. An exclusive feature of the Van Brunt Drill.

Cannot Clog That is entirely true of Van Brunt Single Disc Drills. In any kind of soil where a team can travel, the Van Brunt will follow and do a first-class job of seeding. Gumbo, mud, or trash have no terrors. The Single Disc Drill became a successful machine when the Van Brunt Patent Disc Furrow Opener and closed Grain Boot were introduced. Do not be deceived by the statement of competitors that theirs is "just as good." An imitation is never as good as the genuine and original success.



New Moline Wagon Clad in Iron, Shod with Steel

THE MOLINE WAGON consists of a hardwood foundation, with heavy iron and steel reinforcements. It not only has heavier pattern WOODWORK, but the IRON and the STEEL that doubles its durability, is of EXTRA SIZE, EXTRA WEIGHT and EXTRA STRENGTH.

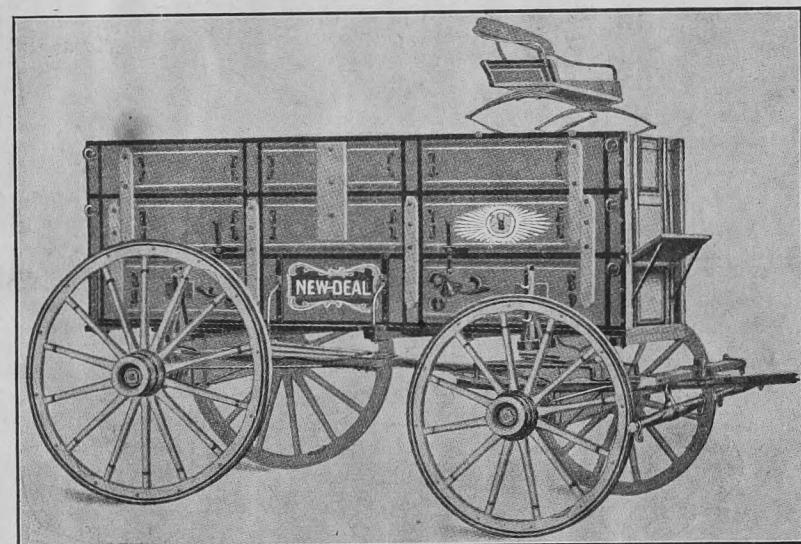
— Steel against steel at friction points.
— Iron protecting wood where strain is the greatest.
— Double bracing of gears and grain-tight box. Is it any wonder that farmers call this wagon the "IRONCLAD?"

Wagon Book Free.

Our master mechanic has written the story of the "Ironclad." We have published it in book form and, while they last, we are sending these books free to farmers who ask for them.

If you want a copy, just ask for it on a postal card. When you write, state the name of your nearest wagon dealer.

WRITE FOR CATALOG.



New-Deal Wagon

NEW-DEAL WAGON is made of air-seasoned lumber.

NEW-DEAL WAGON is equipped with patent double collar skein. NEW-DEAL WAGON skeins are dust proof, therefore, will hold grease longer, and run easier than others.

NEW-DEAL WAGON skein is heavier, belt is longer and larger, taking in more axle.

NEW-DEAL WAGON has riveted grain cleats (not nailed or screwed) NEW-DEAL WAGON has reinforced bottom, both front and rear.

NEW-DEAL WAGON has clipped gear both front and rear.

NEW-DEAL WAGON has a box that is flax tight.

NEW-DEAL WAGON is extra well painted, striped and finished.

NEW-DEAL WAGON has a trussed tongue, cannot warp or break.

NEW-DEAL WAGON has a channeled ironed reach really indestructible.

WRITE FOR CATALOG.

JOHN DEERE PLOW COMPANY, LTD.

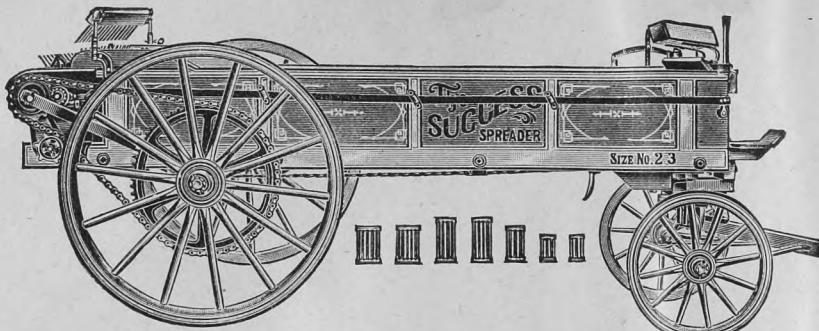
WINNIPEG

REGINA

CALGARY

EDMONTON

The SUCCESS SPREADER Takes Another Step In Advance



Seven Sets of Roller-Bearings

Settle the Matter of Draft

For many years the Success has been considered the typical manure spreader. It was first in the field. It had choice of necessary features. It tested and proved and patented for its own exclusive use all of the worthiest devices. And now it takes another step—a most important step—in advance of all other spreaders.

By its equipment with seven sets of roller-bearings—one set in each wheel, one at each end of spreading cylinder and one in cylinder driving mechanism—there is no question but that the Success

Runs a Horse Lighter than Any Other Spreader

All 1909 Success Spreaders will be equipped with these roller-bearings. It is a feature we have been working on for years and its value to spreader users cannot be over-estimated. The cold-rolled steel roller-bearings at the same time

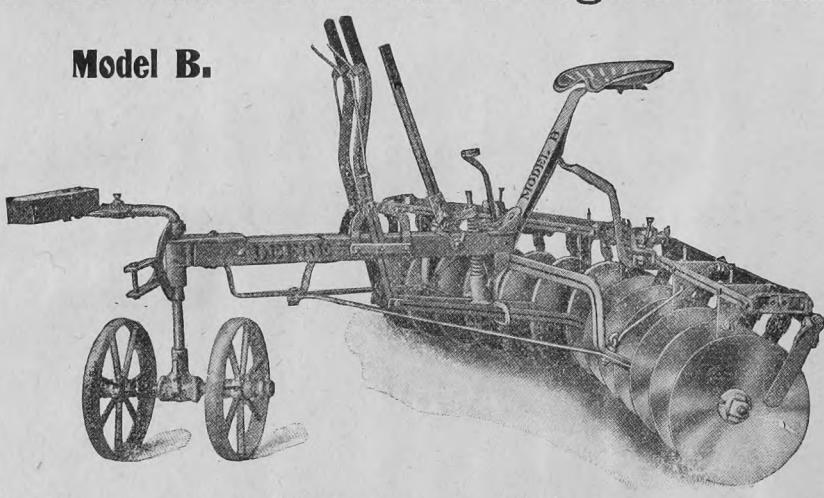
Save the Horses and Save the machine

The roller-bearings do away with all friction and wear in the working parts; they lessen the shocks and strains from driving over rough, uneven ground; the entire machinery runs with less power, consequently with less breakage; they cause the Spreader to run almost as smoothly and evenly as a stationary machine.

WRITE FOR CATALOG.

Disc Harrow with Tongue Truck

Model B.



THE only really flexible disc harrow built. Spring pressure feature holds gangs to their work.

Bearings are hard maple (soaked in oil).

Steel shanks or standards, are strong and give more clearance.

Oscillating scraper (adjustable), will scrape where most needed.

Each gang is equipped with a large bumper in centre, taking end thrust.

Tongue Truck

Tongue truck is made universal to fit all makes of Deere Disc Harrows. The only truck made with set-over pole for 3-horse hitch.

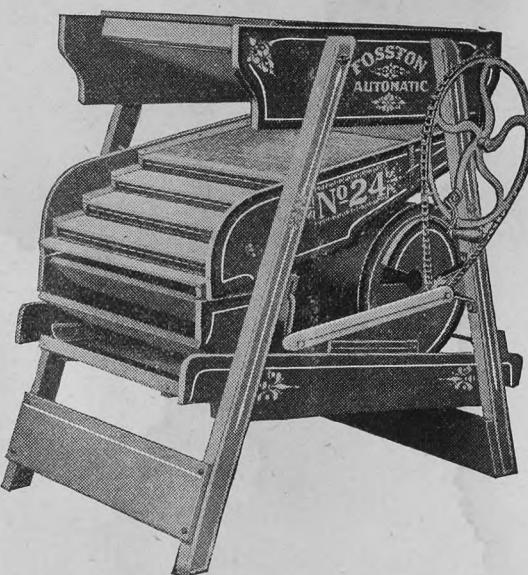
WRITE FOR CATALOG.

The FOSSTON

WILL enable you to rid your field of wild oats.

Will take oats out of wheat or flax better than any other mill made.

Absolutely the best cleaner of all kinds of grain ever invented.



Here are Fosston Facts:

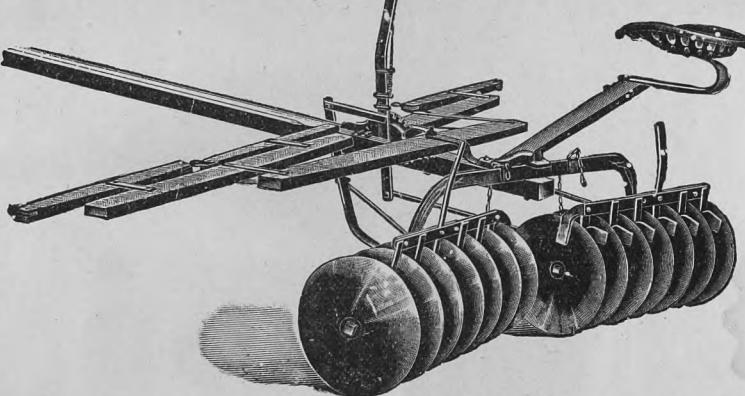
The only Patented Feed Device—which allows grain in machine only when running. Feeds full width of sieves.

A Patented Gang for separating wild or tame oats from wheat. Composed of a series of nine perforated zinc screens.

A Bottom screen thirty-six inches long. Under this screen is arranged a patented cleaning rack to keep bottom rack clean. Special attachment for separating wild or tame oats from barley. Screens for cleaning all kinds of grain. Bagger can be attached in five minutes.

WRITE FOR CATALOG.

Genuine Bissell Disc Harrow



THE Disc that Farmers want. Some good features are—CORRECT BALANCE—Stays down at its work, does not buckle, bind and hump up in the center.

Shape of Disc—Cuts, turns and stirs the soil, where others only scrape the ground.

Light of Draft—Forty hard Anti-friction Balls used in every "Bissell" Harrow relieve the horses.

Ease on Horses' Necks—The HITCH is well back, the seat projects at the rear of frame; no weight on necks.

SOLE AGENTS FOR CANADIAN WEST.

WRITE FOR CATALOG.

JOHN DEERE PLOW COMPANY, LTD.

WINNIPEG

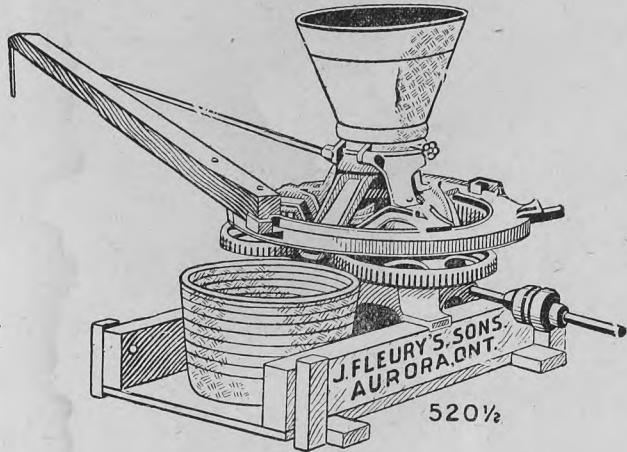
REGINA

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THE FAMOUS
"RAPID-EASY"
 And
GOOD LUCK GRINDERS

The Largest Line made in Canada.



GOOD LUCK POWER AND GRINDER

SPECIALLY ADAPTED TO FARMERS' WORK.

Construction and Finish perfect.

Thousands in use and giving highest satisfaction.

The best is cheapest; an inferior machine is dear at any price.

YOU want only the best.

We also have a full line of Straw Cutters, Horse Powers, Wood Saws, Etc.

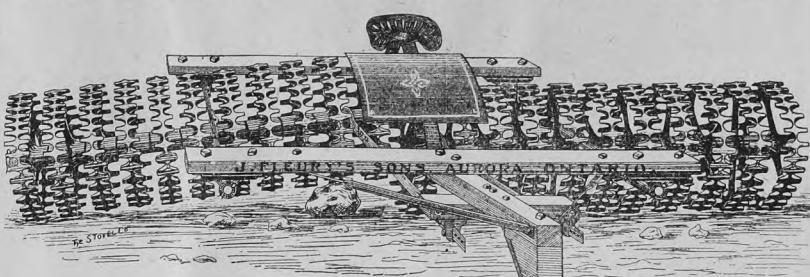
SOLE AGENTS FOR CANADIAN WEST.

WRITE FOR CIRCULARS.

In sizes and styles (patterns) adapted to all powers—Tread or Sweep Power, Windmill, Gas or Steam Engine.

More work, of best quality, with same power than by any other grinders.

FLEURY'S PULVERIZER



16 Wheel, 1-pole, cuts 9 ft. 7 1/2 inches.

22 Wheel, 1 or 2-pole, cuts 13 ft. 4 1/2 inches.

24 Wheel, 2-pole, cuts 15 ft.

There is no implement more valuable to aid the sure production of good crops than a Pulverizer.

It is used with great advantage on new-plowed land, in rolling down flat and solid the turned-over sod, which rots much more quickly and completely after the use of the Pulverizer.

On dry and lumpy land it breaks down the clods and also does the work of an ordinary Land Roller.

Its greatest value is in its use for compacting the soil about the roots of plants, thereby inducing capillary action that keeps a flow of moisture from below to the roots; in an ordinary or dry season, without its use, the plants would suffer for want of sufficient moisture.

The Pulverizer is also used on light soil to prevent the ground from drifting and leaving a large part of a field of young plants with roots too lightly covered, or exposed to the dry, withering atmosphere.

The Fleury Pulverizer has a hinged (or broken) axle, which accommodates itself to rolling or uneven land.

The Fleury Pulverizer is more durable than others, for in addition to the bushing in the wheels, the ends of the hubs of the wheels are chilled—which greatly reduces the end wear on the wheels; (and found only on the Fleury Pulverizer).

WRITE FOR CATALOG.

The DAIN Pull Power Hay Press

Is an All-Steel, Full-Circle, Two-Stroke Hay Press

It has Superior Advantages In Every Respect as you can see by this cut.



Compound leverage power, few parts

Bales delivered in front, out of dirt and chaff.

Bales can be tied from one side of press.

Rocker tucker folds every feed perfectly, makes smooth bales.

Large hopper and feed opening gives great capacity.



Pneumatic cushion. No heavy rebound or jar.

Smooth, square ended bales, the kind that pack close in cars.



No toggle joints or complicated parts.

Set it at the center of stack. Save one man's wages every day.

Write Your Nearest John Deere Agency or

DAIN MANUFACTURING COMPANY
Ottumwa

WRITE FOR CATALOG.

When you buy a Hay Press you want a durable, dependable Press that has labor-saving money-making features.

When you buy a DAIN Pull Power Press you get all these features, you get the latest, up-to-date best Press made.

JOHN DEERE PLOW COMPANY, LTD.

WINNIPEG

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The Man that Starts 1909 with a Sawyer & Massey Outfit

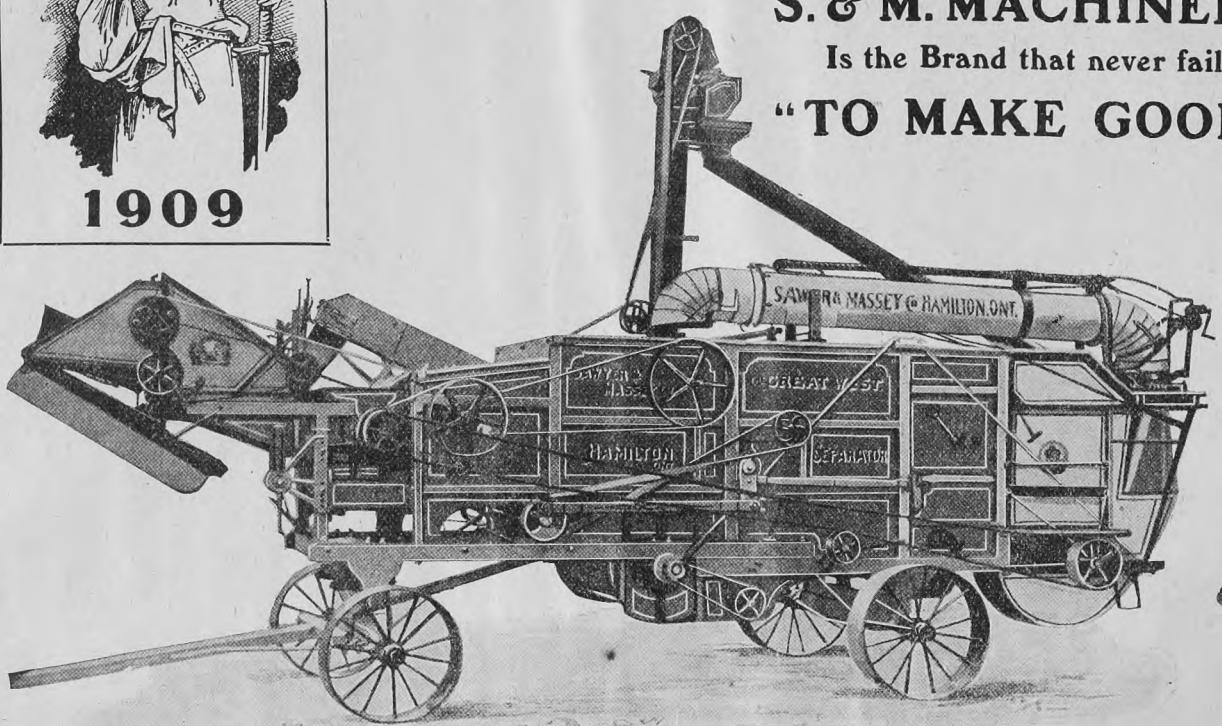


Or the man that determines to have one early in the season, so as to utilize the Combination Engine, for Spring and Summer Plowing, need have no fear but that he will end the Season of 1909 profitably. Read the following testimonials, then write to us for further information, or better still, come and see us if you can possibly manage. It is a foregone conclusion that you will never regret having done so.

S. & M. MACHINERY

Is the Brand that never fails

"TO MAKE GOOD."



Sawyer & Massey's Celebrated "Great West" Separator.

Claresholm, Nov. 19, 1908.
Sawyer & Massey Co., Ltd.,
Winnipeg, Man.

Gentlemen:

The Threshing Outfit which we purchased from you, consisting of 36 x 60 "Great West" Separator with Hawkeye Feeder, Perfection Weigher and S. & M. Gearless Wind Stackers, also the 26 H.P. Compound Traction Engine, has given us entire satisfaction.

We find that the machine takes very little power and the engine steams very easily. We have an engineer who has operated several other makes of engines, and he is puzzled to know what makes our engine steam so easily, use so little water and still have lots of power.

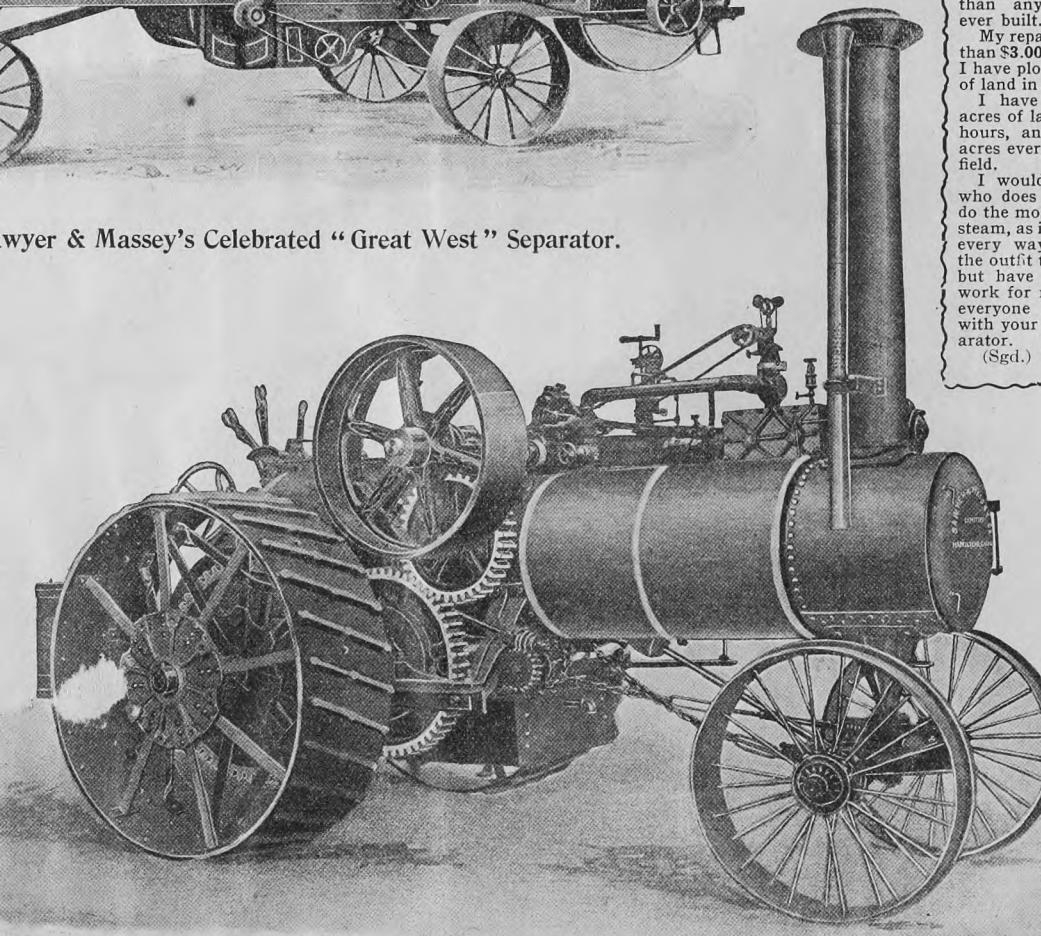
The wide gears on this engine are very strong and run very quietly on the road.

With regard to the Separator and all its attachments, they run very smoothly and are very well balanced. Every man without exception, for whom we threshed this year, wishes us to come back again next year. We have averaged 2,492 bushels per day throughout the season of 25 days—have threshed wheat at the rate of 450 bushels per hour, and oats at the rate of 700 bushels per hour.

We have a crew of 23 men with ten bundle teams, run a cook caboose and have three tents for men to sleep in, making in all a most complete outfit.

We have averaged more per day than many of the larger outfits in this vicinity, and without hesitation recommend the Sawyer and Massey Threshing Machines to any interesting purchasers.

Yours respectfully,
PARKS & WANNAMAKER.



Sawyer & Massey's Famous "Combination" Threshing and Plowing Engine.

Boharm, Nov. 7, 1908.
Sawyer & Massey Co.,
Winnipeg, Man.

Gentlemen:

A few words about the 26 H.P. Combination Engine and "Great West" Separator I purchased from you in 1907.

I have plowed during the summer of 1908, with the Engine, and will say that I can plow an acre of land with less water, less coal and less worry than any of my neighbors can with any other steam engine, and I would far rather have your engine for plowing and threshing, than any gasoline engine ever built.

My repair bill has been less than \$3.00 on the engine, and I have plowed over 700 acres of land in all.

I have often plowed 30 acres of land in a day of ten hours, and can average 25 acres every day I go into the field.

I would advise any man who does much farming, to do the most of his work with steam, as it has beaten horses every way. I did not buy the outfit to do outside work, but have done considerable work for my neighbors, and everyone is greatly pleased with your "Great West" Separator.

(Sgd.) W. A. KILGOUR.

Sawyer & Massey Co. Limited.

(Established 1836)

Manufacturers of ENGINES and THRESHERS AND ROAD MAKING MACHINERY.
HAMILTON ————— and ————— WINNIPEG

A MAGAZINE
FOR

THE FARM
AND HOME

CANADIAN THRESHERMAN AND FARMER

Vol. XII.

WINNIPEG, CANADA, JANUARY, 1909.

No. 1.

WHEN it is learned from figures compiled by so great an authority as James J. Hill, and presented before so important a body as the conference of Governors, that only about 65,000,000 acres of arable land remain to be brought under cultivation in the United States, we realize that some radical changes in farming practice on this continent are imperative. Three or four years at the outside, will see that area producing, and then a peculiar situation will result. Even now, with 20,000,000 acres being added yearly to the area under cultivation, consumption of wheat is rapidly overtaking supply, and from all indications in a very few years Canada will be a larger exporter of wheat than the United States. Indeed it is quite doubtful whether that country will export any wheat at all ten years from now.

Whereas in 1880, United States exported 180,000,000 bushels of wheat and flour, while Canada only exported 7,500,000 bushels, 26 years later, in 1906, United States exports had fallen to 97,000,000, or little more than half, while Canadian exports had multiplied by six, becoming 47,000,000. It is, then, obvious that unless some new and unforeseen factor enters into the calculation, the day is not far distant when the United States will cease to be an exporter of wheat or flour. If her mercantile and manufacturing industries increase at their present rate, and the average yield of wheat decreases at its present rate or even stays at the now-prevailing figure of about thirteen bushels per acre, it does not require a long look ahead to know that the American nation will some day eat all the wheat it can grow.

The step from being an exporting nation to becoming an importing one, is taken over night. No nation stays long on the border-land, especially when its population increases as rapidly as does our neighbors. So we find ourselves contemplating a time—not very distant—when the United States will

A LOOK INTO THE FUTURE

By A. FRANK MANTLE.

compete with Great Britain on a large scale, as purchasers of Canadian wheat. That reads well for the Western farmer, but let us look one step beyond and see the lesson for Western Canada revealed in these figures.

Should the United States come to a partially dependent position as regards her bread supply, it will be entirely due to inadequate farming. She has the acreage, and the acres have all the fertility necessary to feed many times the population now relying on them for bread. A reckless extravagance in handling

It is not necessary to howl calamity, but on the other hand we decline to play the ostrich and ignore the tendency of facts. All the immediate future is rosy with promise, and the flood of wheat will grow larger each year for some time.

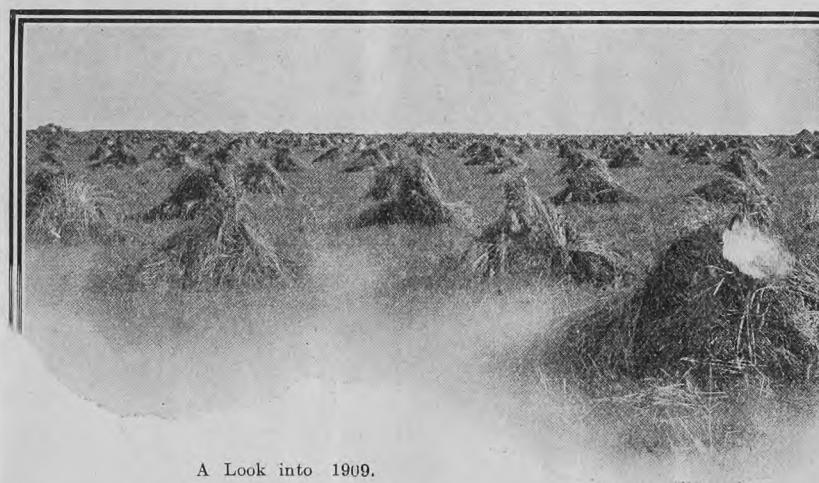
Prosperity and expansion east and west will follow in its wake; but what about the back ground? What about that day when our wheat acreage is all taken up and our population in the East is large enough to eat all the bread the West can spare, and we in turn commence

lation because the exportable surplus of wheat is increasing, when, in reality, there is greater cause for self-scrutiny because the yield per acre of our farms is decreasing.

It may be sneeringly remarked, that with only 10,000,000 of the 175,000,000 acres available at present under crop, it is a trifle premature to worry over decreasing yields. Is it? Is not the United States starting too late to worry? Is she not beginning to lock the stable when all the best horses have been stolen? Her best statesmen think so. Should we not learn the lesson now, in youth, by precept rather than in later life, by bitter experience? Our acreage under crop multiplied four-fold during the past decade; the total jumped from 2,500,000 to 10,000,000 acres. There is every probability that this rate of increase will be maintained; if so, 1920 will find us with more than a quarter of our vast heritage of wheat lands actually under the plow, and, of course, a far greater proportion—probably half—occupied.

The Anglo-Saxon race, at least, is beginning to admit that it owes posterity something. Our children have a claim to inherit sound minds in sound bodies. That is generally admitted. Have they not just as strong a claim to inherit as well-stored an earth as we inherited? Natural resources should be handed down undiminished—even increased as population increases—if posterity is to have a square deal at our hands. Healthy bodies and trained minds are useless tools if the God-given raw materials which they should shape, have been dissipated through reckless extravagance.

Viewed in this light, does it not behoove Western farmers to take thought for the future and see to it, each as an individual, that so far as his land is concerned, the decrease in average yields shall cease, and the farm shall be handed down to the next generation at least as rich in soil fertility as Nature made it?



A Look into 1909.

vast natural resources will have reduced another world power to a position of dependence as regards the great essential of civilized life.

The average yield of wheat from the farms of the Canadian West is also steadily decreasing, though it is not so low as that of the United States, and this is so in spite of the large acreage of wonderfully rich virgin soil added each year. That being so to-day, what will the rate of decrease be when our tilled acreage is much larger and the percentage of virgin soil added yearly becomes inappreciable?

to look elsewhere for the staff of life? The area available for wheat is fixed and is already known. It is conceded that 175,000,000 acres is the full extent of Western Canada's wheat lands. What is not known is, how many bushels of wheat can be raised on each of those acres by science applied to agriculture, or—good farming. Increased yields ought to accompany increasing population. It is not so important that we cultivate more acres, as that we cultivate our present acreage better. There is a tendency on our part to self-congratu-

CHRISTMAS is a time for reflection, while New Years is, or should be, a time for deflection. We have clung to old habits, travelled in beaten paths in the past, and as Father time turns the hour glass and registers another notch in his sickle, it is not a bad thing to turn our thoughts into new channels and build our foundations on some new ground for a New Year.

Someone has said that "A wise man changes his mind often, but a fool never." Therefore don't believe that you are casting discretion to the winds when you say to yourself, "I am going to do some new things in 1909. I am going to plan work along new lines." By so doing you are not admitting any weakness on your own part, but rather a confidence in your future capability, and your ability to carry out a new work—the surety of your feet on unbeaten paths.

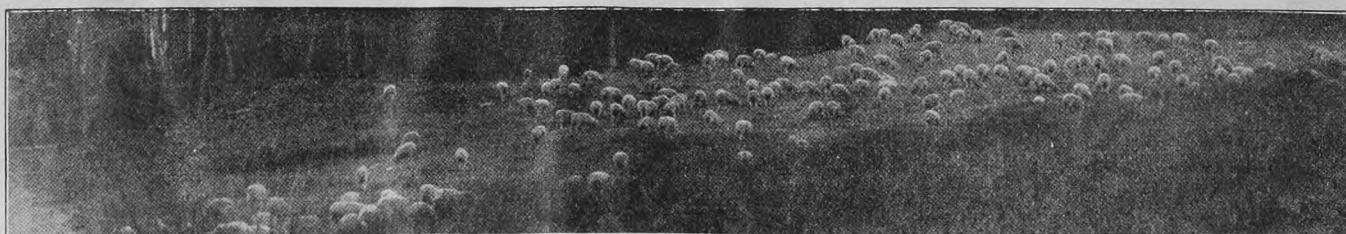
New Year, through custom and joke, has come to be dubbed the time for resolutions, and if every farmer had a penny for every one that is made and broken, the price of wheat or the mortgage due need not worry him in the least. It is not of such resolutions that I wish to speak, but of new plans for everyday work that shall be carried out, God and health permitting.

The first thing that naturally comes to my mind is the matter of "system on the farm." Farming with many is pretty much of a haphazard catch-as-catch-can affair. In so far as records are concerned, it is run along the lines of least resistance with no possible chance for a balance sheet at the end of the year. There is nothing whatever upon which to base it.

"But," says the farmer, "I have no time for such things. I am far too busy to bother with a set of books and besides I find that things will generally straighten themselves out at the end of the year, and that all of the balance sheet required is the balance in the bank. So long as that is large enough there is nothing much that matters."

That is one way of looking at it, but it is a very poor one, and while I would not advise any farmer to use up time figuring over a set of books when the wheat is crinkling to be cut, or the land is suffering to be plowed, nevertheless, there is every good reason why the farmer is just the man who should keep an accurate record of his work, his receipts and expenditures, his profits and his losses and their sources.

I remember one time of calling upon a farmer in Southern Wis-



—NEW THINGS—

By E. F. W.

consin, in haying season. He had about thirty acres of fine clover cut and bunched, and upon looking him up I found him figuring out the net profit of that clover crop, in his improvised office in a room in his house, while dark and threatening clouds rolled nearer from the Southwest, and his men leisurely employed their time in getting in a portion of the hay. Needless to say that that crop did not produce a very handsome profit.

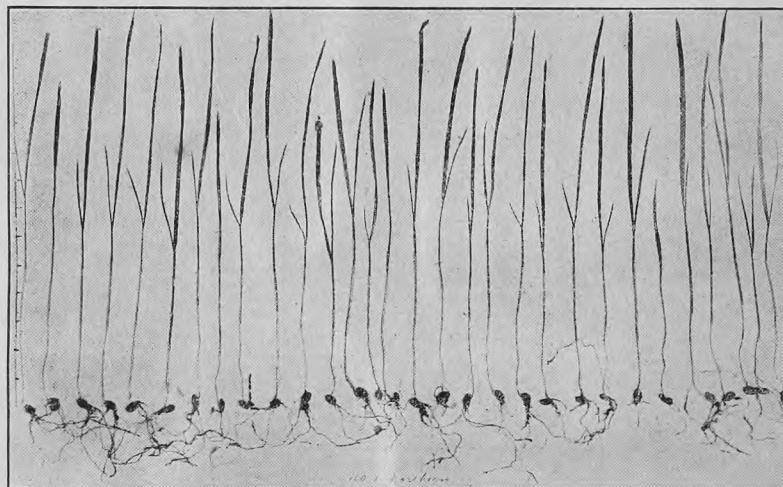
That is not the kind of figuring that counts. No pencil has ever

such as can now be had at any stationery or drug store for about \$1.00 or \$1.50, is all that is needed, and five minutes per day will do the work.

If it is a new thing with you, Mr. Farmer, you can do nothing better than to include it in your plans for 1909. Try it for 365 days, and I'll wager you'll thank this publication for suggesting the matter to you.

GOOD SEED.

Western Canada has two important seasons every year—seed



Just plants from No. 2 Northern Wheat.

been improvised that can do the work of the hands directed by an organized brain.

Farm records are a most laudable undertaking for any farmer. They show an excuse for a failure or a reason for a success. If the wheat crop has made money the records show why. If it has been a losing proposition the farm records point out the leak holes whereby the profits of land and labor have dwindled away, and at the same time provide a possible safeguard against a recurrence of loss.

The farm record points out the labor costs, the additions made to land, stock and machinery. It shows bills payable, bills receivable, to whom and by whom.

It is not a difficult task to keep such a record. A good daily journal,

time and harvest. Harvesting the grain is merely saving what Nature has produced, but unless due care is taken to put seed of the proper vitality into the ground, Nature cannot be blamed for not producing a bumper crop. The seed fair, the government—the railways, the farm press, are all in their several ways advocating the use of good seed among the farmers, for it is a well-known fact that in the rush of spring work, many farmers will sow grain about which they in their own minds have considerable doubt. There was a time in this Western country when many of the farmers were isolated, and railway communication was not to be had, that it was not possible for the farmer to get good seed if his own was not up to the standard, but

such, except in a few instances, is not the case at present, and any farmer who sows poor seed grain in this day and generation, deserves to lose his crop, or raise one in which there is no profit.

The Seed Fair has done much to change the old condition of affairs. It reaches out and gathers together, at the same time advertising it, much of the best seed grain available, and while the price charged may be a little higher than the regular market value, it is nevertheless worth to the farmer every cent charged when compared with seed grain that is not up to the standard of vitality.

There is no better time to look into this matter than at the beginning of the New Year. At this time the supply is ample, and the price charged is not nearly as high as it will be later when there is bound to be a rush demand.

As a New Thing it would not be a bad plan to take a mental inventory of your stock of seed grain, and if you have any doubts as to the quality of your present supply, get into touch with some that you know is good and unload your own onto the open market.

GOOD ROADS.

I hear someone say that the matter of Roads is not a "New Thing." Why, we hear of the road question before the Master set foot upon earth. True, but if one were to travel through Western Canada just at the spring break-up, he would undoubtedly come to the conclusion that it was a brand new thing to some people, or that it was an old thing sadly neglected. It matters not which it is, the result is the same, and in order that no one in particular may be blamed, we will call it a new thing.

There is perhaps nothing that concerns the farmer of to-day more than the subject of good roads. They are alike his best friend or his worst enemy. Forced to travel over them he must take them as he finds them, with the result that they many times mean a drain upon his profits.

In a country like Western Canada, where many of the sections are only sparsely settled, it is an almost impossible problem to provide a macadam highway for every farmer, for in some cases where he goes in ahead of railway, town, or even civilization itself, he must count himself

fortunate if he can but blaze a trail to follow. These are New Things, in fact, they are very much so, but they belong to a discussion other than this.





Pioneer road building is not a problem, it is an intense evolution, other and more pressing things crowding it of necessity into the background for a term of years.

But there are sections in plenty that have been settled for years, where the trail has given way to the fenced and established highway, and where the miles of road in proportion to the number of farms is small. It is to such roads that the farmer is in duty bound to turn his attention, and there is no better time than at the beginning of the New Year.

Nearly every farmer has stored up within his memory of the past season, many spots on the highway over which he travels most, that gaged the load that his team could haul. Perhaps a dished wheel or a broken axle are particularly vivid recollections. How about that grade on the Jones' Hill? Have you not oftentimes wished it was not quite so steep when you were tempted to put on a few extra bushels of wheat? Verily a chain is no stronger than its weakest link, nor is a road any better than its softest mire hole or steepest hill.

You can't mend roads at this season of the year, but you can lay your plans to have them mended when spring opens, and there is no better time to talk the matter over with the farmers of your municipality than right now. They have a more open ear on a winter's day in town than when the spring acres are waiting to be plowed, or when the wheat is crying in the bin to be sown, that it may sprout and grow and produce a crop.

Modern road making is a comparatively easy task if given a little thought and previous consideration. The road plow, the road grader, the wheel scraper, the split log drag, have reduced road building to a science, and if due care is exercised once the highway is put into shape a passable highway can fall to the lot of every farmer.

Put the "Good Roads" proposition down in your list of "New Things" for 1909. You cannot hope to revolutionize your local highways in one season, but a start in the right direction means much, and there is no better time to start than "Now."

FARM MACHINERY.

Farm machinery claims more of the farmer's attention as regards 'New Things', than perhaps anything else on the farm. Every year sees new machines, both as regards make and

type, placed upon the market, and it is a wise farmer who makes a good choice.

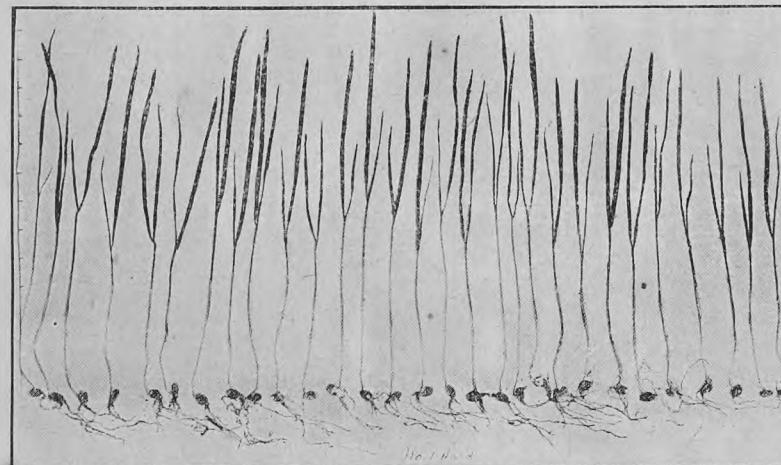
It is not the disposition of the manufacturers, nor would it be wise for him to place any machines upon the market for the farmer to buy, unless they were practical and workable. His business is built up on good goods, and while he may occasionally fall down in his calculations, he generally tries to ward off all possible weak tools by subjecting new machines to the test of experience before attempting to sell them to the farmer.

The chief difficulty with new things in the machinery line, is that the farmer buys without first having satisfied himself that the machine in question is what he wants—that it is adapted to his particular needs and requirements. This is some-

I have attempted in this article to touch upon only a few of the many "New Things" that should appeal to the up-to-date, progressive farmer. My only purpose in writing the above is to set you thinking along "New" lines, and at the same time to temper your thoughts with discretion.

The Mystery of Flying.

A murmur broke from the crowd, a whisper of admiration. "Oh!" Out over the distant tree-tops and the shed's peaked roof, above every background but the blue, rushed into view then the real picture—the one I'd dreamed about—the vast bird-thing, wheeling in a long lazy sweep of gracefulness through the profundity of the sky. Had it



Just plants from No. 1 Northern Wheat.

thing that the manufacturer is not responsible for. It is his business to make good machinery and sell it, and it is the farmer's business to buy only such as he wants.

The farm machinery catalogs of to-day are text books of farm machinery. They deal with the construction and handling, the care and operation of the machines which they represent. There is no better time than the New Year for the farmer to get into touch with both the new and the old in farm machines. There may be many new labor-savers on the market that he should own, and there are doubtless some machines that he does not want at any price. Don't be afraid of a new thing in machinery, but carefully consider its adaptability to your own conditions before you purchase it.

trailed a rope, a wire, even a single kite cord, the marvel of it might have failed—failed, because one would have realized then a bond between it and the earth. But there was nothing of that. Instead, it shot higher, free of all restraint; and with all the power of a great sea bird drove away upon its course.

Again the white pinions tilted, and again the flyer turned, rushing onward, yet so certain in its movements that one had the feeling that it lived and flew of itself, guided by its own living will. One dreamed that its brain was its own, almost forgetting the man who sat there, skilfully fingering the levers. And then, as if homeward bound to its aerie, it came rushing down the sky with the speed and poise of an albatross reaching along the trades.

I stood straight underneath the

flyer as it went by. It was a hundred feet in the air then. I looked up and saw the small, crouched figure calmly handling the

levers; and Wright's face was as unconcerned as the face of a farmer's boy geehawing a sleepy yoke of oxen along a country road.

Out on the plains they used to tell the story of an old Pawnee buck who had just seen his first railroad engine. "Mebbe so. Injun plenty drunk now." Then he turned to his squaw. "You see um too?" Yes, she saw it. "Unh, squaw drunk too. Squaw stealum my whisky," he grunted, and stolidly knocked her down. In this way he not only disputed the improbable but asserted a policy of conservative doubt.

Say "flying machine" to the ordinary mortal, and you stand the chance of hearing a cackle of derision. On my way out to the parade ground at Fort Myer, Virginia, I said it to a man from Philadelphia, whereupon he regarded me with a fishy eye.

"Flying? Oh, they've got to show me first," said he. "Those Wrights may be doing it, but seeing's believing."

"Oh, well, I don't dispute they've done something," he went on to argue; "only—a hop, skip, and a jump off the ground, and back again, isn't flying. Not by a long chalk."

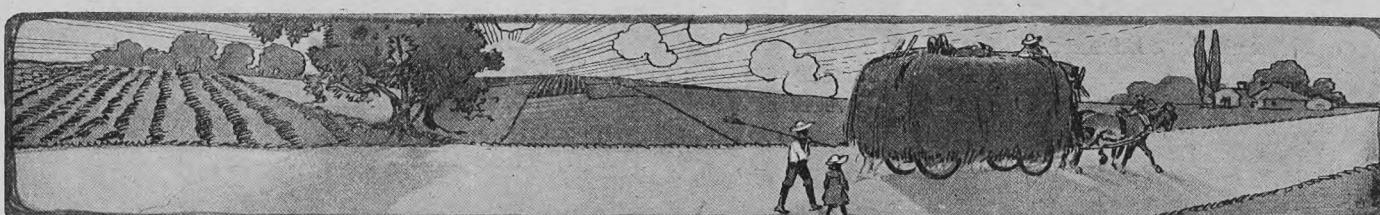
Nor was he wrong in that. He had in mind some of the hippodromists that have done much to bring aviation into ridicule. Flying is not a hop, skip, and a jump, and back to the earth again.

But that afternoon, when the Wright aerodrome soared into the air from the Fort Myer parade ground, and wheeled, turning with the ease of a gull, I heard a gasping voice behind me. There was my friend from Philadelphia, his eyes starting like a cod's. "My God!" he said, and whispered it again, "we've lived to see it!"

So we had. Seeing was believing, and he didn't go home to beat his wife.

But if you missed the sight you may need convincing. I can't blame you. I wonder what the cave man thought who first struck fire. Or the first man to hear Bell's voice whisper through a length of copper line. Or what a Hottentot's impression is when he first hears a phonograph. The man from Philadelphia and I saw Wright fly at Fort Myer, and I don't think the cave man and the Hottentot have much the better of us in awe.

Maximilian Foster, in the January No. "Everybody's."



JAN.

THE CANADIAN THRESHERMAN AND FARMER
CANADA'S FARM MACHINERY MAGAZINEPublished Monthly by
E. H. HEATH COMPANY, LIMITED,
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Ottawa, Canada, for transmission as
Second Class Mail Matter.

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E. H. HEATH - President and Manager
E. W. HAMILTON - - - Editor
Members Western Canada Press
Association.

1909

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EDITORIAL.

1909

DAWNS upon the horizon of Canadian history with all the promises of a year long to be remembered.

365 days have wrought many changes. January 1st, 1908, saw a balance sheet scarred and blackened with failures, broken trusts, and over all hung the threatening cloud of despair, from which sprinkled the chilling drops of distrust.

1908 started on its journey under conditions that were anything but favorable. The end of 1907 saw a panic such as the North-American Continent seldom witnesses. Some of the largest financial institutions in the country went to the wall and a short crop cut off the supply of money that should have rushed in to fill up the gap.

Retraction followed upon all sides. Business concerns ceased to expand, but rather cultivated outlay and extension in a way that was abnormal. Collections were slow, in fact there was not a great deal of money in the country to collect, and business houses were obliged to carry much old paper, while banks enforced them to cut down their line of credit.

Added to this was the fact that The Dominion Elections in Canada, and the Presidential Elections in the United States, were to be held in 1908, and the possibility of a change in "The Political Powers That Be" always tends to make the manufacturing and moneyed interests more or less careful.

If the inner history of the latter part of 1907, and the first nine months of 1908 could be written; if we could tabulate the sleepless nights and worries of the men in action; if we could but gain a view of the intricate problems of finance that were worked out, our estimation of the average business man's ability would rise, doubtless one hundred per cent.

But such things are now a matter of history to be talked about as the panic of 1907.

How different is the scene in 1909. (For the sake of convenience I will speak only of Canada). We have had what is practically a bumper crop. We have moved more of it toward the world's market than ever before in Canada's history at this season of the year. Money is comparatively easy. Many of the old debts have been wiped off and the country has been cleansed of the speculative element that for sometime past preyed upon every dollar that could be pried loose. There are everywhere signs of a healthy normal growth that can only tend to develop this great Western country along normal and legitimate lines. Manufacturers everywhere are preparing for a large season's trade, and the banks are loaning their funds freely but carefully for the carrying on and development of legitimate enterprises.

Real estate is probably the only thing that is not very active, but from past experience who can gainsay that this is not an indication of a sound, healthy condition of affairs as opposed to condition two years ago when the majority were discounting the future to the limit. The sales that are being made are not small by any means, but they are being made quietly and with no blare of trumpet as characterized the sales that represented so many promises to pay at some future date.

The farmer is feeling better, in fact, taking the farmers as a whole, it can truthfully be said that they have put their affairs in order during the past year and, if Western Canada produces a good crop in 1909, with a fair price, the agricultural public will be in better shape than ever before. In addition to having money to spend they will have the added advantage or knowing where and how to spend it. They are through chasing wills-o'-the-wisp.

With such a condition of affairs confronting us, does it mean that we can sit down, fold our arms and await developments? Decidedly no. We are in the same position as the boatman who is going up stream and who has just succeeded in paddling his canoe over a swift and dangerous rapid. We must keep moving with the bow pointed straight up stream, otherwise we will lose everything that we have gained.

It is a notable fact that Western Canada suffered less from the recent

panic than almost any other section of the North-American Continent. This should be a cause for considerable satisfaction to those of us who live here, for it shows that we are in a measure self-sufficient and that we are able to "hoe our own row" through weather foul or fair.

Let us be optimistic to a degree that will inspire confidence in self and confidence in others, but let this optimism be tempered with good, sound business judgment. It is only by pulling together and placing our dollars where they will give full hundred cent value, that we can make A.D. nineteen hundred and nine a bumper year. Let us hope and trust and work for a bumper crop.

* * * * *

A vigorous agitation is on foot for a World's Fair in Winnipeg, in 1912. It is a laudable enterprise and one that is worthy of serious thought and consideration. It is worthy of an ambitious, thrifty public, when we consider that such an event marks what is practically an epoch in a country's history and development. Even local exhibitions that run for only a few days, entail no small amount of labor and expense, and are not always a success financially. When we take into consideration the fact that a World's Exposition includes the entire civilized world, that its visitors and exhibitors are world-wide, and that it takes years to build up an Exposition site that is to be used only a few months, we must necessarily realize that we are up against a proposition, the magnitude of which no one man can grasp.

That it would be an advertisement for Western Canada, and in fact for the entire Dominion, no one can deny. It would bring the country, its products and its possibilities before the world, as can be done in no other way. It would bring people here that would visit us on no other occasion. For three whole years all eyes would be centered upon Canada West. It would mean an advertising campaign, the magnitude of which no one can foresee.

But all good things come high, and a World's Exposition is no exception to the rule, unless it be in the degree of its height, for it is a very costly affair in more ways than one.

In the first place it takes a large initial investment of which the country must furnish the greater portion. It would be "The talk of town and country," for three years to the certain detriment of a portion of our business interests. Our energies would be spent largely along one particular line, and when the event is over there is certain to be a re-action, the results of which are problematical.

If such an Exposition is to be held in Western Canada, Winnipeg is undoubtedly the proper place to hold it, situated as it is at a most central point and with transportation facilities that connect it with every quarter of the globe. It is of sufficient size to accommodate a big crowd, and occupies a position such that it would be Canada's World's Fair, and not that of any particular Province.

Let us not be dazzled by the glare of a World's Exposition footlights until we have carefully outlined the staging of the play. Taking it for granted that the audience will be large and appreciative, it is the act and the re-action that must be carefully considered.

* * * * *

This issue begins a new volume of "The Canadian Thresherman and Farmer." We have already completed twelve, and we believe that we can truthfully say, with no play upon modesty, that every volume has been better than the one which preceded it.

With this in mind we have laid plans for 1909, that should work out a Farm Machinery Magazine for our readers that will be most acceptable. Beginning with February, every number, so to speak, will be a special one. A large portion of each issue will be devoted to some special phase of farm machinery. These separate numbers will be introduced by a specially-designed cover appropriate to the subject under discussion, and many of the articles will be by authorities in their particular lines.

OUR GUARANTEE.

No advertisement is allowed in our columns until we are satisfied that the advertiser is absolutely reliable, and that any subscriber can safely do business with him. If any subscriber is defrauded, E. H. Heath Co., Ltd., will make good the loss resulting therefrom, if the event takes place within 30 days of date advertisement appeared, and complaint be made to us in writing with proofs, not later than ten days after its occurring, and provided, also, the subscriber in writing to the advertiser stated that his advertisement was seen in THE CANADIAN THRESHERMAN AND FARMER. Be careful when writing an advertiser to say that you saw the advertisement in THE CANADIAN THRESHERMAN AND FARMER

The Spirit of the New Year.

WE wish you joy in this New Year, joy of new beginnings, of high expectations, of renewed faith in things to be. May the spirit of the New Year go with you through all its days, and bring you many sweet surprises, many hopes realized, many dreams come true.

If disappointments or sorrows or apparent failures come to make you sad, may you not spend God's time in mourning, but go on your way rejoicing in His many blessings, counting them over and over, like the little child counting stars,—always beginning but never ending.

THE **WORLD** IS
OUR FIELD
 AND
**PLoughing, Hulling,
 Threshing,
 OUR WORK**

RUMELY

OUR new catalogue is now ready for distribution. It tells the story of a line of Threshing Machinery that has been before the American public during the last fifty-five years. We have used our rich experience to build upon, and each year we have added new and valuable developments. We haven't space in this ad. to tell you what we did in 1908. You must get our catalogue for the complete story. Write for it.

IF YOU WILL FILL THIS OUT AND SEND IT TO US, WE WILL SEND YOU A SOUVENIR

Your Name _____
 P.O. Address _____
 State or Province _____
 Town _____
 Amount of land you own or cultivate _____
 How old is your Engine? _____
 How old is your Separator? _____
 Will you buy this year? _____
 Do you want our Catalogue _____

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La Porte

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THE amount of work performed by and the intricate nature of the farm machinery at the present time, make the proper care and handling of the same a matter of the utmost importance. The loss annually through neglect and improper usage, would more than pay the interest on all the money invested in the machinery used on the farms. Take for instance, the extra power required to draw a gang plow, when the shears are dull or when the plow does not clean properly. Besides this, the driver loses time cleaning the earth off the plow in his efforts to get it to clean. The extra power required and time lost mean money and should be taken into consideration. This is only one of the many ways in which loss occurs.

The shears of plows should therefore be kept as sharp as the nature of the soil will permit. Care should also be taken to keep the shears, moldboards, landsides and coulters perfectly bright. A coating of grease applied to the parts when the plow is not in use, will greatly aid in keeping them free from rust. Considerable power is lost, on account of the side draft, when four horses are hitched abreast on a gang plow. On this account it is better, whenever possible, to work them tandem.

The cutting mechanism of other machines, such as binders and mowers, requires careful attention. The knives should be kept sharp, and the edges of the ledger plates on the guards should not be allowed to become rounded. The knife should also be kept running close to the ledger plates. This is especially important when cutting fine prairie grass with a mower. The pitman rod on these machines should fit snug both on the pitman crank and knife head or considerable power and speed will be lost.

Machines such as binders and mowers, do their work to better advantage and are lighter in draft, when they are driven at a certain speed. This speed should be ascertained by careful observation, and the machine should then be run as nearly as possible at that speed. A fast walking team is a great advantage in running machinery of this kind, as it is easier to keep a certain speed when restraining than when urging a team. Very often it is good economy to put an extra horse on such machines.

Considerable loss may occur through improper handling of the levers of binders, especially is this the case, if the grain is badly lodged. In cutting lodged grain, the binder should be tilted down enough to raise the grain sufficiently to allow of its being picked up by the reel. The reel should be adjusted so as to lay the grain on the table canvas in the best possible condition. If this is done skilfully and the butter and knotter attachment adjusted so as to tie the band round the cen-

The Care and Handling of Farm Machinery

ESSAYS BY STUDENTS OF THE M.A.C.

ter of the sheaf, waste will be reduced to the minimum.

All bearings should be kept well oiled with a good quality of oil, and when the machine is started to work, after standing for some time, coal oil should be used freely to clean the boxings out. Axle grease is more suitable for the axles of wagons and gang plows. Care needs to be exercised in purchasing axle grease, as some brands of this material are very poor lubricators.

In order to protect machinery as much as possible from the influence of the weather, it should be given a coat of paint occasionally, and when not in use, should be kept under cover. The machine shed need not be expensive, but should at least keep the implements dry. It should be situated convenient to both the house and barn and far enough away from both to be safe, in case either of these buildings take fire.

During the spare time in the winter, the machinery should be gone over and put in good repair for the next season's work. Every hour counts during the busy season, and if the machinery is in shape to do the work properly without delay and with the least expenditure of energy, much valuable time will be saved.—ALFRED BRADSHAW.

By JAS. R. STEWART.

Care, as regards farm machinery, is one of the terms almost unknown in this Western land.

From the founding of the farming communities, when men could not afford shelters for their machinery, up to the present time, it has been left, when not in use, to the tender mercies of all kinds of weather in some out-of-the-way fence corner, doing its work when called upon, until time had wrought such ravages that it would not go any more.

Then too, the handling has not been of the best. On many farms, a promiscuous lot of men are hired, and some of these are the machine operators. It is true that the best men on the farms are generally given precedence in these matters, but many times even they are not competent to handle machinery.

Too often machinery is run without any thought or care being given to the wear and tear of its parts, until like a broken-spirited horse, it can do no more. Many of our operators give little thought to the adjustment of the several parts of the machines which they handle.

By WALTER F. SMYTH.

The care and management of farm machinery may be viewed from two sources, viz.: the care the implement is given while in operation; secondly, during its period of idleness. To get the most satisfactory results from any farm machinery in regards to the efficiency of its work, and the length of time the implements are fit for service, are two things that concern all thoughtful farmers, and the above results can only be brought about by having a skilled man to operate and manage them.

While operating machinery, all nuts should be kept tight, for if they are allowed to become loose, it weakens an implement, materially, which is sure to end in breakages, causing an unnecessary expense as well as time. Oiling is another important thing to observe about machinery, and should be applied wherever there is the least friction between any of its parts. And the oil used should be of the best quality. This will form a film between the parts in contact, and if the oil is applied regularly and often, no friction will occur, and consequently no boxings will be burnt out, and the implements will run free and easy. Oil cups should be kept free from dirt so as it will allow the oil to get into the boxings and perform its work of lubrication. Now all implements should be painted and painted well, both wood and iron, as this will add a great deal to its appearance as well as adding several years of usefulness to its life.

Sheds are being built to shelter the machines from the action of the elements, and more thought is being given to their operation. How often we hear the statement made, that any man can farm. This is a fallacy common to people who have had very little experience or are of a careless disposition.

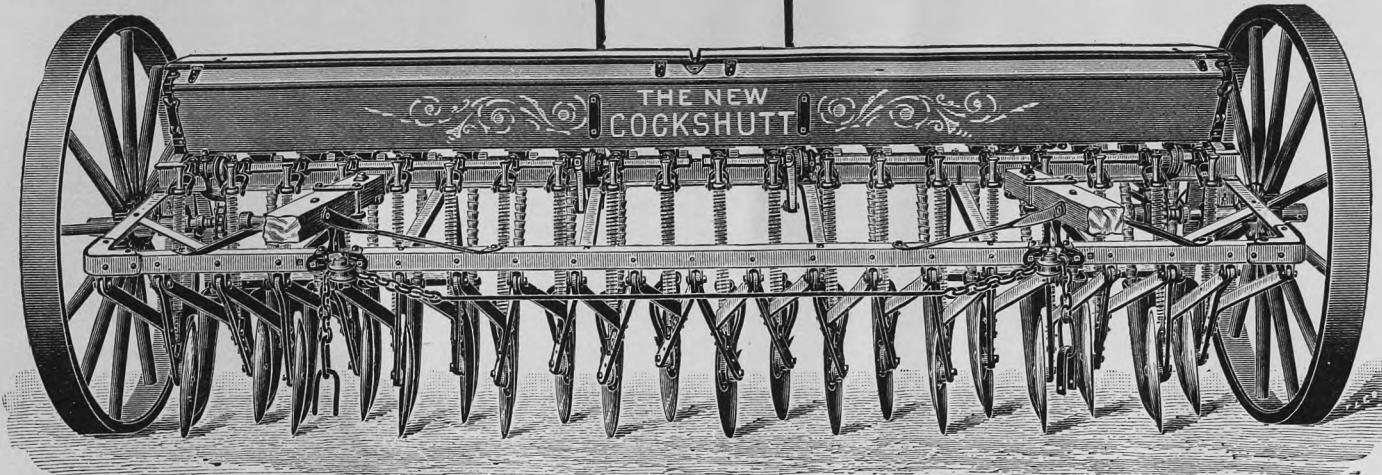
The leaks on a farm are more numerous than in any other line of work, and consequently only the fittest can survive the ravages of time. From year to year, how many men leave the farm and drift to the towns and cities, or go farther West to homestead? These are at the same point at which they started years ago. And what of their prospects of ultimate success? They are older and less able to battle in this busy age and soon they are, "down and out," making a precarious living at some unstable occupation. But what of our best farmers? Those men of foresight, who saw grand possibilities in this land many years ago, and came here to make a name for themselves and for their country. Who have cared for their machinery and forces as for themselves, and thus stopped the main cause of loss on the farm?

They have gone from strength to strength, always with one aim in view, the betterment of their country. Consequently, they are looked upon to-day by other nations, as the world's leading agriculturalists and are happy in their comfortable farm homes far from the noise and bustle of the city, with a substantial bank account, and peace and contentment in their hearts, and happy in the knowledge of a life's work well done.

Farm implements that are used but once a year, such as the thresher, binder and seeder, should be well cleaned and oiled before taken into the shed, and placed where

PERFECT WORK

The "New Cockshutt" will always run easy. The frame can't sag in the centre because the short axles, heavy I beam and the bracing of the truss rods carry it perfectly rigid.



COCKSHUTT,
BRANTFORD,
CANADA.

The Easy, Dependable Drive

It is well-known that there is far less friction with a **good** chain drive than with a gear drive. The "New Cockshutt" is equipped, not with a malleable chain, notice, but with a **hardened steel** chain drive. Malleable chain being soft, wears quickly and stretches easily. This makes it liable not to fit the sprocket wheel, which causes friction and breakage and makes it easy to understand why trouble arises from the use of some chain drives. We guarantee our chain not to stretch at three times the breakage strain of a malleable chain. Being hardened it will not wear, and will always fit the sprocket wheel exactly, preventing friction. Our adjustable chain tightener enables the operator always to keep the chain tight.

Accurate Grain Distributor

The Cockshutt Force Feed is positive and accurate. The parts are machine-made and closely fitted. We use a notched washer so that we can always keep a close feed and yet prevent the cracking and grinding of kernels. Metal bridges are used between the feed cups. The grain never lodges on them, and the last kernels are sown out of the grain box at the same rate as when it was full. The Indicator Pointer is controlled by a tempered coiled spring which holds it against the end of the feed shut-off. The least movement of the Feed is registered on the Indicator. The Shifter Lever and Indicator are separate, avoiding lost motion and wear. The land measure registers the number of acres sown.

See the Cockshutt Agent, or send direct for Catalog.

COCKSHUTT PLOW CO., Limited, WINNIPEG, REGINA, CALGARY, EDMONTON.

The "WONDER" GRAIN CLEANER

A Cleaner that does **BEST WORK** every Season,
no matter how the grain varies in size and condition.

A DISTINCT ADVANCE IN GRAIN CLEANER CONSTRUCTION

Nearly any grain cleaner will do satisfactory work some years and under certain conditions. The "Wonder" has **proven** its ability to do satisfactory work **every year** and under **all conditions**. You will find the reason for this in the way it is built.

Even Distribution on The Sieves

The oscillating Feed works up and down, backward and forward, insuring that the grain is evenly distributed the full width of the sieves. It is easily regulated by a screw, and when set does not require to be touched again.

Adjustable to Suit Conditions

Both the upper and lower shoe can be adjusted separately up or down to any incline, to suit all kinds of grain. By raising the lower shoe to the top notch, the most thorough work is done, and this is advisable, for instance, in cleaning wild oats from wheat. Both shoes can also be adjusted to a long or short stroke as desired.

Thorough Cleaning Devices

The **wheat gang** of the upper shoe is specially designed to take wild oats from wheat. To be appreciated this special construction of sieves has to be seen. The sieves are shorter and shorter and when the wild oats are once taken out the possibility of their dropping through again is reduced to a minimum. The upper shoe as you have seen, can be adjusted up or down to suit conditions. There are also two zinc sieves for barley, one zinc sieve for oats, and two zinc sieves for flax in the upper shoe. To finish taking wild oats out of wheat, two zinc screens are supplied for the lower shoe. One allows very little waste. The other allows more wheat to go through with the oats, but leaves the cleaned grain absolutely pure. These screens can be used for barley and oats, and there is also a zinc screen for flax. The fan is larger than usual in mills of this construction.

Extreme Durability of Sieves

All the sieves are of zinc—thirteen of them. They will not rust and play out as wire sieves do. Nor will they allow the grain to lie on them—no need of any cleaning device to keep the bottom rack clear, for the "Wonder" will clean all day without clogging.

The "Wonder" is made in two sizes: Lower screens 24 x 36 inches and 32 x 36 inches. Supplied with or without bagger. Strongly built; well finished, thorough cleaner; large cleaning capacity.

SEE THE COCKSHUTT AGENT OR WRITE FOR INFORMATION



WINNIPEG

REGINA

CALGARY

EDMONTON

COCKSHUTT PLOW CO., LIMITED

they will be the least in the way. The belts and canvases should be removed and hung up or placed in a tight box so as they will not be destroyed by mice.

The implements should then be viewed over carefully and adjustments made if any are needed. This will give us plenty of time to order repairs and get them on the machine, so that when the time comes for its use it will be ready and in a first-class condition for the service of man.

By HENRY DUCIE.

This subject is one of the most important that the farmers of the present day have to consider. When we take the cost of machinery into consideration, we are persuaded that it is the duty of every farmer to look into this matter. The need of suitable shelter for implements is apparent even to a casual observer passing through the country; he sees seventy-five per cent. of the farm machinery standing in the fields, the owners using it to collect snow in winter, and to shelter hens in summer. The period of actual use each year is small of the most expensive of our farm implements. The rest of the year they stand exposed to the oxidising effect of the air. The moldboard of the plow; the sickle bar of the mower; and all unpainted metal parts become coated with rust, a simple compound of iron and oxygen. The paint peels off the wood, and it swells and shrinks alternately, according to the kind of weather. The rain soaks in the wood around the bolts, giving the air the needed aid to start decomposition, and the result is the rapid decay of the wooden parts of all machinery exposed to the weather. The rate of depreciation in the value of machinery is doubly increased by the exposure of it to the weather. Therefore we may safely state, that the actual cost of a machine shed is far below the loss incurred by any farmer, who neglects to provide shelter for his machinery.

A binder, which will with care last for at least twelve years, will be practically useless by exposure in six years. When new, it should be thoroughly examined by the owner, for many of the workmen who set up these machines care very little whether they are put together correctly. The paint should be cleaned out of the bearings by the application of kerosene. The reel slats must be adjusted so that when the machine is in motion, they will not strike the outside divider. The sickle ought to work smoothly. The levers for tilting the binder, and raising the reel will work more easily if well oiled. The rollers must turn easily. The elevator and table canvas should be put on to run with the buckles last, and they must run square. The knoter is the most complicated

part of a binder, and often gives a great deal of trouble, but any farmer, by studying it and using patience, will overcome all difficulties. The billhook must be tight enough to hold twine when tying, yet loose enough to release knot when tied. The pressure on the twine holder ring must be sufficient to keep the twine from slipping out, but not to cut it. Unbound sheaves may be the result of several causes, such as the twine slipping from the billhook or twine ring; tension on twine too tight; or slight roughness on some of the keepers through which the twine passes, holding it thus increasing the tension; and poor twine. The sheaf carrier, which is one of the many labor-saving attachments, ought to work freely, and prompt to the application of the foot. The drive chains must be tight enough to prevent them jumping off, yet not too tight, or they will grind. A graphite lubricant applied to the main drive chain will lessen the friction. After the bearings have received a liberal quantity of good oil, the machine will be ready for use. A binder should have one thorough oiling every half day, and the farmer who desires to economize, will apply oil frequently to the parts which have rapid motion. This may sound like strange logic, but there is no truer saying than the old axiom, "oil is cheaper than machinery." The driver will carefully examine all nuts which may work loose, and avoid all breakages liable to result. He must also take note of the wear on all parts which are subject to great strain, and replace the same before they are worn out. The canvas should be kept as dry as possible, and one way to accomplish this is to have a piece of oiled canvas long enough to cover and extend up over the deflector; this being placed over the binder at night, will shed all rain and dew which may fall. The usual custom of loading it with sheaves will be abolished, and the canvas will last longer. When through cutting the grain, the canvas must be removed from the binder, laid out in the sun to dry, afterward stored away. All dirt which may have collected around the rollers and other parts, should be removed. The woodwork must be kept covered with a coat of paint, this will keep the water out and prevent decomposition by the air. After being oiled, the machine should be stored in a shed until it is needed again.

The first cost of building a shed for machinery often deters many a farmer from building one. But when he considers it thoughtfully he will find that the actual cost will be saved in a few years. The machinery on a hundred and sixty acre farm would cost about one thousand dollars, (\$1,000) this amount would have to be expended again at the end of eight years, if implements were exposed to the

weather, whereas with careful handling and storing, these implements would last for at least twelve years. A suitable shed can be built for \$200. Many of the farmers when starting in the West, cannot afford this amount, yet can, if convenient to timber, easily put up a building even though it may have a sod roof, still it will be the means of saving dollars, and one dollar saved is one gained. The decision rests with each individual farmer whether he will continue to leave his machinery exposed, thus practically throwing money away each year, or will he build a shed and thus add materially to his income by lessening the rate of depreciation of his machinery.

In concluding, it may be said that every wide-awake farmer should settle this matter to his own satisfaction. Build a machine shed and you never will regret it.

By J. A. McGREGOR, Manitou, Man.

There is probably nothing in this Western country of ours, that is so badly abused, as farm machinery. Instead of being well-cared for, the various machines are as a general rule, driven into a fence corner, and there left to the mercy of the elements till they are needed.

It is a fact admitted by all, that this is not the proper way to do. On a great many farms, it is a noticeable fact of late years, that farmers are building sheds for their implements. Others still persist in leaving their machinery outside, and if you ask them why they do not build a shed, they put you off by saying they have not time, but it is really indifference as to the life of their implements.

The implements found on the average Western farm, may be divided into four classes, namely: road, tillage, harvesting and threshing machinery. Road implements include buggies, wagons and sleighs. These should all be kept in good condition, broken parts being replaced at once and all kept well painted. Buggies and wagons should be greased or oiled regularly and always kept under cover when not in use.

The implements of tillage are: plows, harrows, disc harrows, seeders, cultivators and packers.

The plow should be carefully adjusted, because no plow can do good work if it is not in condition to do it. The moldboard ought to be greased when the plow is not in use, to prevent rusting. Also if you expect to get good results, send a man with the plow, who will take care of it.

Considering harrows, seeders, packers and cultivators together, just see that they are in shape to work. The harrow should draw square on the draw-bar and the teeth ought to be kept sharp. The

packer and cultivator should have plenty of oil on their respective bearings, also they should not be twisted around short in turning, as this is hard on the pole, also on the horses. The seeder must be properly adjusted and have all its parts working right. The bearings must be kept well-oiled and when not in use the shoes should be rubbed with grease to prevent rusting.

The implements of harvest comprise, hay rake, mower and binder. There is not much to be said about the rake except, that it should not get careless usage. The mower should be watched and worn parts replaced by new ones. The driver of the machine should oil often, and thereby prevent himself a lot of trouble afterward.

There is probably no machine on the farm that needs more care and handling, than does the binder. In many cases it is driven into a fence corner after the crop is cut. During the winter, snow piles up on it and the whole machine is twisted and warped. The owner finds this out the next season when he starts into a field of ripe grain and finds that the binder will not work. If it had been kept inside during the winter, and well oiled, the previous harvests, the owner might have saved himself considerable trouble and expense.

After the crop has been cut and in the stock, it is time to think about threshing. Every farmer does not own a threshing machine, but some do. To make a success of threshing, a man must be capable of managing men, also he should be thoroughly acquainted with the machine, especially the separator. If possible he should manage the separator himself, and then he is near the majority of his men the whole time. Before the outfit starts out in the fall, it should be thoroughly overhauled and all defective parts replaced by new ones. If the owner is managing the separator he should employ an experienced engineer and see that he takes proper care of the engine. That is, he should not jerk it around carelessly or indifferently. He should keep all parts carefully adjusted, and well lubricated, also paying attention to the fire and water. Then when the machine starts, it should be kept running, because no machine is making money standing still.

To sum up, a farmer should have a machine shed in which to put his implements. It ought to be large enough to hold them all without crowding, and leave room for a man to get around and examine the various machines. Besides adding to the life of his machinery, an implement shed is an improvement to the farm. It shows that the farmer has good foresight and that he is trying to farm in the right way, thereby helping himself and setting a good example to his neighbors.

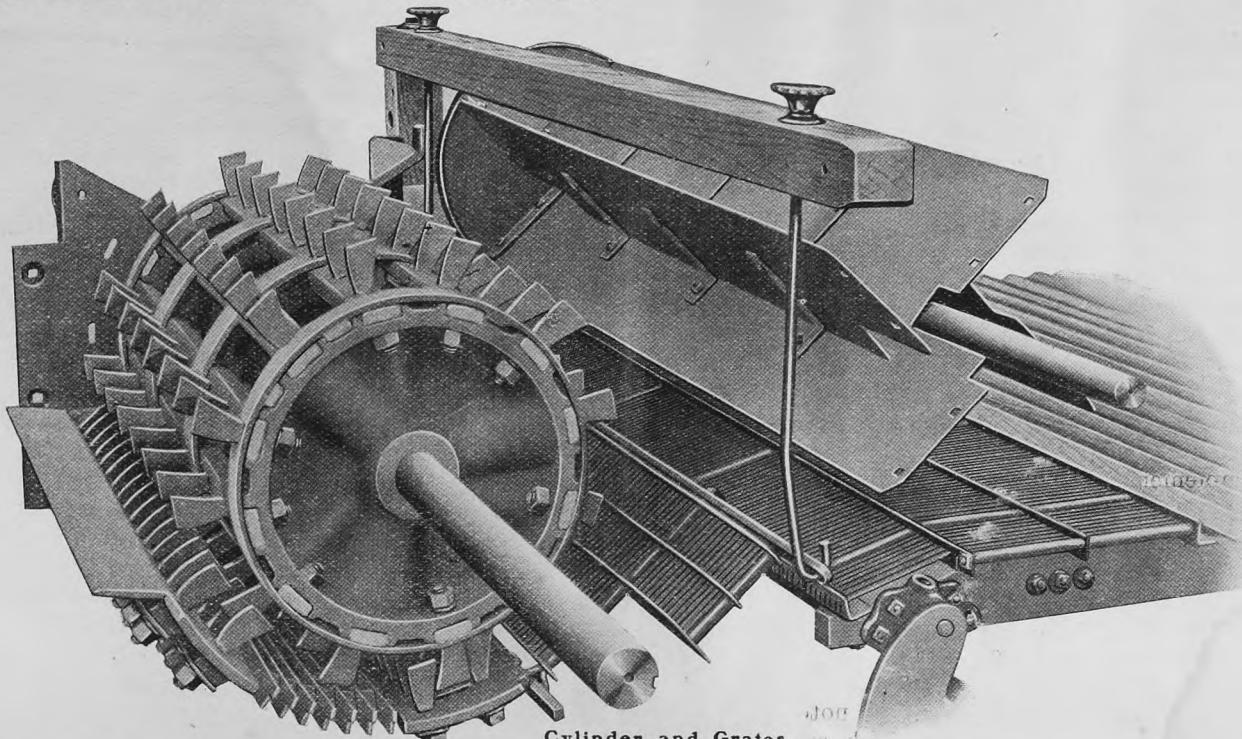
My, But How They Are Rolling In—BUT LET 'EM ROLL!!

THEY are all being taken care of in good shape. Hundreds of threshermen have already asked us to take their names for the new 1909 Avery Catalog. They will soon be ready to mail. To give you an idea of what our new catalog will contain, we show here three of the new illustrations. Illustrations tell the story even better than words, and so we try to use the clearest possible illustrations. But we do not neglect the words—we also try to describe things plainly and just as they are—without exaggeration—a plain statement of how they are built and what they will do.

Already we have received the colored proofs from the new plates, showing the double page illustrations of the Steam Plow Outfit and "Yellow Fellow" Separator—and we are delighted. Many of those who have seen the proofs at our office, say they are the best colored illustrations of machines they ever saw. We really believe so, too.

These are hints of some of the things in the new 1909 Avery Catalog—And we haven't said anything at all about some of the new machines, such as New Steam Plow, New Traction Steam Shovel, "Yellow Kid" Separator and others.

But no more now—you surely want to see one—that's all. Especially so if you are in the market, and even if you are not, you will want to keep up-to-date on the new improvements. It's free. Simply fill out the Free Catalog Coupon below or write a letter or a postal to Avery Company, 675 Iowa St., Peoria, Ill. Better do it right away.



These are the parts in an Avery Separator which get the grain out of the heads and also largely separate it from the straw. Every part is an improvement:—

JUMBO TOOL STEEL CYLINDER TEETH.—The kind that eat pitchforks and very nearly any old thing and almost never cause any loss of time.

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CONCAVES, ADJUSTABLE BOTH FRONT AND REAR.—Can be raised and lowered, either front or rear, to suit condition of grain.

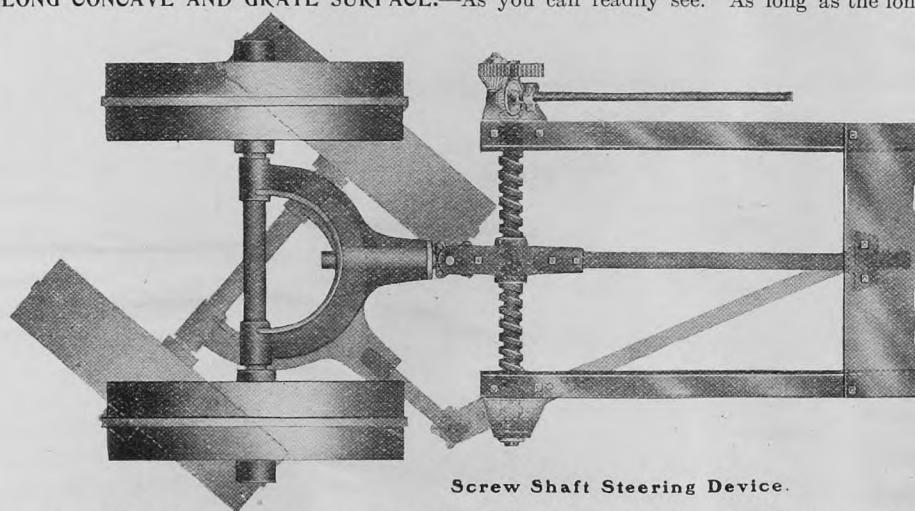
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One of the things in the construction of the Undermounted Engine that has made a decided hit: easily operated, slackless, positive, especially fine for Plowing, Grading and Road Work of all kinds. Also build Special Steam Steering Engines to attach.

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THE following particulars of the early history of agricultural engines, will be found of interest in connection with the article, "A Chapter in the History of Traction Engines," part of which, dealing with the early period, has appeared in this paper for August and September.

The early histories of traction and portable engines are very much bound up together, for a traction engine was often produced by adding suitable gearing to an ordinary portable engine, so that a reference to the history of one is hardly complete without a reference to the other. The Royal Agricultural Society has had a great deal to do with the development of both types, largely through the institution of steam trials at annual shows, in fact, the Society's reports upon these are almost a history of the agricultural steam engine.

Incorporated in 1839, a meeting was held at Oxford, but no steam engines were shown. In this year, Howden, of Boston (Lincoln) and Alexander Dean, of Birmingham, built portable engines, also Messrs. Tuxford brought out a 6 H. P. engine and threshing machine upon the same frame, not upon wheels. So far as can be gathered from a brief mention, the first six upon wheels appearing in 1842-3, and then twelve following with the threshing machine separate.

The early days of agricultural engines were not without their exciting moments. An interesting example of the risks taken is seen in the Society's enquiry into the methods of registering steam pressure. At the Northampton meeting, in 1847, the judges laid it down "that no engine be allowed to compete with steam above 50 lbs. per square inch, or 40 lbs. per circular inch." Now at the York meeting, 1848, an engine was exhibited so defective in construction that it actually could not be kept at work, and at the Norwich meeting, 1849, a 6 H. P. Hornsby engine appeared with a mercury pressure gauge. It was not till the late 'fifties that pressure gauges came to be regarded as a necessity, and that cheapness brought them gradually into common use; before this a valve loaded to the maximum pressure was all that was provided.

A few remarks about the action of the R.A.S. regarding gauges, were given not long ago in "The Engineer," London. It appears that at the Manchester Show, 1869, no exhibitor was allowed to get up steam in the show yard until Messrs. Easton & Amos, engineers to the Society, had satisfied themselves that the boiler was safe at 50 lbs. per square inch, the maximum allowed pressure, and had seen that it was fitted with a proper gauge and safety valve. A mercury column was set up in the show yard, against which the gauges were tested. The results of the test was written upon a card in these

Notes on the Early History of the Agricultural Engine

BY C. S. STOCK

words "This gauge having been duly examined and tested, is certified to show 40 lbs. (or whatever it was), when the boiler pressure is 50 lbs." The first year (1869) this was done, the results as regards accuracy were simply appalling, for only nine gauges were correct out of 52, whilst a number were nothing more or less than so much scrap, one actually being 30 lbs. out. This state of affairs was made public through the action of the Society and the engineering press, so that in a very few years accuracy was the rule.

Returning to history; at the Liverpool meeting, 1841, Messrs. Ransomes showed a portable engine upon two wheels only, with a vertical boiler and patent Davies (Birmingham) disc engine, having only one main moving part, it could be coupled to the threshing machine by a shaft with universal joints. It was remarked in the report that the valve of steam power for working fixed threshing mills, had been long known in N. England and Scotland, but they believed this was the first attempt to render it portable. The Society appears to have been prepared to make a steam trial of any engines submitted to them for that purpose.

At Bristol, 1842, four steam engines were shown. Messrs. Ransomes exhibited the 1841 engine arranged to propel itself, which it did at 4 to 6 miles per hour, but the judges considered it questionable whether self-propulsion was an advantage or not. A platform was provided to carry the threshing machine. It is probable that this engine was never meant to be regarded as a traction engine, the idea being that it could dispense with horses in moving from farm to farm. Messrs. Ransomes also showed another engine on four wheels. Alex., Dean of Birmingham, exhibited, and Mr. Cambridge, of Market Lavington, Wilts, showed an engine with an oscillating cylinder and four wheels.

At Derby, 1843, six engines appeared, three being self-propelled; Cambridge and Dean were again exhibiting. In the report is the following:

"The judges may now report that the manufacture of travelling steam engines is become a systematised business. In Lincolnshire, steam engines, both fixed and portable, are becoming general on large farms. They are also let out on hire here for wheat or barley threshing, the charges being from 1s. to 1s. 3d. per quarter, including wages of engine driver and feeder of machine. The farmer usually finds coal and assistant hands. The

Yorkshire Fire Office will now insure at 3%, where these engines are used, their usual charge being 2%."

This shows that by 1843, the agricultural steam engine had become a factor of importance.

At Southampton, 1844, there were four engines, amongst them, one by Dean, who exhibited at every R.A.S. meeting from 1842 till 1847. In this instance his engine called forth severe criticism from the judges—"that it proved to be inefficient and dangerous in the extreme, they thought it a toy and not useful to agriculturalists.

Only two engines appeared at Shrewsbury, 1845, by Dean and Cambridge.

Newcastle-on-Tyne, 1846, saw only one, this was Cambridge's, with the cylinder placed vertically in the steam space of the boiler. The Northampton meeting, 1847, was an important one for engine builders, because the action of the Society in offering a premium of £50 for the best engine, stimulated interest, and seven engines were exhibited. It was at this time the R.A.S. fixed 50 lbs. per square inch as the maximum boiler pressure. The prize was won by the portable engine of Mr. Cambridge, who had started manufacturing in 1843, and made many different designs.

In the 1847 engine of 6 H. P., he made a large step in general arrangement towards the more modern type; the cylinder was slightly inclined to the horizontal at the fire-box end, driving on to an over-neck crank shaft in bearings near the smoke-box end. The boiler contained one big oval flue, partitioned off so that the gases had to travel backwards and forwards three times, the smoke-box end of the flue was extended and surrounded by the feed water tank, but the general appearance of the engine approximated to that of the more modern type. A few engines of this design were at work a few years ago and may be still. About this time vertical cylinders finally gave place to horizontal.

Barrett & Ashton exhibited a 5 H. P. engine with many parts in brass to avoid corrosion, the works were enclosed in a wooden lock-up box, and the engine was of the return connecting rod type, price £189, a Hornsby 6 H. P. engine costing £245; this gives an idea of the prices then ruling.

E. Bloxsam, of Gillinerton, showed an engine with the works underneath and reversing gear, price £160, Ryland & Dean's two-cylinder type cost £300, Tuxford's 6 H. P. engine and threshing machine combined cost £245.

At the York show, 1848, the

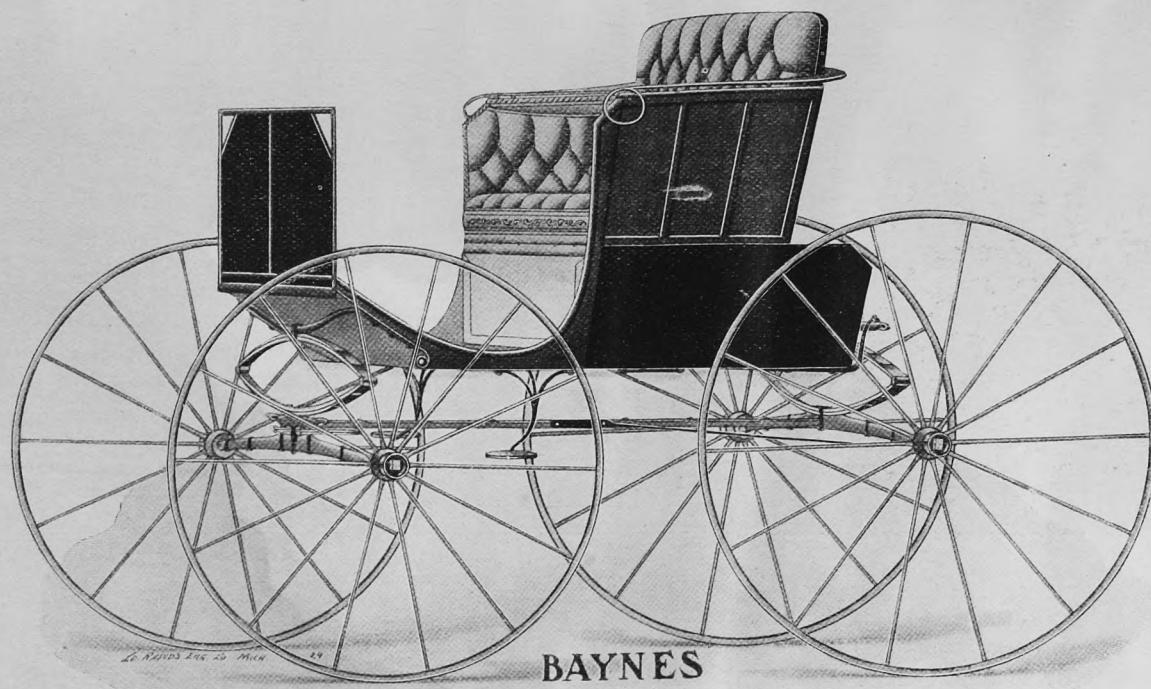
premium was won by Messrs. Hornsby & Sons: Barrett & Ashton had an engine with vertical cylinder, and we find the Barrett, Exall & Andrews engine, which was too defective to work, whilst the Norwich show, 1849, included the Hornsby engine with a mercury gauge. At this show, Messrs. Clayton & Shuttleworth, who built their first in 1845, made a hit with three good portables of 5, 7 and 9 H. P., and Messrs. Ransomes & May exhibited the Willis self-moving engine illustrated in the September No.

A rough sketch of this has recently been published in the "Railway Magazine," London, from the diaries of the late Mr. David Joy, inventor of Joy's radial valve gear, and at one time connected with Messrs. E. B. Wilson & Co.; here the steering is depicted as operated by rotating a horizontal shaft running above and parallel to the boiler, which engages by bevel wheels with a vertical shaft placed in front of the smoke-box, the lower end of which connects with the front axle. In the description appended, the engine is described as the first farmer's or road engine from which all the agricultural engines have sprung, of course it is hardly correct to describe it as the first road engine, though it was one of the first actual traction engines, but from the historical notes above, it is clearly wrong to say all agricultural engines have sprung from it.

Messrs. E. B. Wilson & Co. were well-known locomotive railway engine builders at that time, and the influence of locomotive design upon the "Willis" engine is plainly visible. The Leiston firm, Garrett & Sons, won the premium at the Norwich show.

Exeter was the town chosen for the show in 1850, a 6 H. P. portable with two oscillating cylinders was considered by the judges to show, "a complication unnecessary in this class of engine." About this time the judges say more than once that they object to iron wheels for farm roads. Tuxfords showed a 6 H. P. with boxed-up works, and the well-known firm of Garrett, Leiston, was exhibiting, also Hornsby, with horizontal cylinder in steam space over fire-box.

The next year, 1851, was the year of the Great Exhibition in Hyde Park, London, and besides several engines shown in the exhibition, ten makers entered portable engines for the trials. The oscillating cylinder seems to have enjoyed a certain amount of popularity for some time, and on this occasion a 4 H. P. engine of this form was shown by Tuxfords, but a decided peculiarity was seen in a 5 H. P. engine brought into the yard, by Messrs. Ransomes & May; this was a trunk engine, a type at one time largely employed in marine work, as mentioned in the September number. This form of engine appeared again in Hornsby's traction engine, 1863. At the exhibition trials the portable en-



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It is not only a beauty, but it is one of those kind that wear as long as a man lives, and the style is good ten years hence.

One of these jobs with rose carmine gear, black body, upholstered in our new Bedford cord, is a fine job for you to show in your repository, and it won't be there long.

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gine of Messrs. Hornsby & Sons, took the first prize, a performance repeated in 1852, at Lewes. It was of 6 H. P.; earlier engines by this firm had a dome shaped fire-box top, but in 1850, the cylinder was placed horizontally within the steam space over the top of the fire-box, this was so in the prize engine, it burned 6.73 lbs. of coal per H. P. hour, the average of the five best engines was 8.13 lbs. per H. P. hour; but the worst engine of 4 H.P., by Roe & Co., burnt no less than 25.8 lbs. per H. P. hour.

In the Official Catalog of 1851, a "registered steam engine," by Clayton & Shuttleworth, is illustrated, it presented the appearance of a rather shallow metal box upon four wheels, with a vertical boiler

and oscillating cylinder attached, all the machinery being boxed in and only the flywheel protruding. Another illustration shows a peculiar looking engine of Garrett's, where the chimney is situated about two-thirds along the boiler, a horizontal cylinder driving the crank-shaft running-in bearings fixed to the back end of the boiler. Particulars of some of the engines of 1851 and 1862, will be found in the "Canadian Thresherman" for October, 1906.

"Some traction engine exhibits in England." The Ransomes 4 H. P. portable, and Barrett, Exall & Andrews engine mentioned there, were of the usual type with a horizontal boiler, and not vertical as might be inferred from the de-

scription, and the Exhibition of 1862, stated to have been held in Hyde Park, though actually not far off was held at Kensington, on the site of the present Natural History Museum. Here Tuxford's traction engine had a single roller instead of driving wheels, and one of Bray's traction engines mentioned in September number, of a similar but earlier design, was used in conveying heavy machinery to the Exhibition, taking 45 tons. Mr. D. K. Clark, of locomotive fame, was engineer to this Company, and features of locomotive practice are evident in his designs.

In 1862, an Aveling (Rochester, Kent) traction engine, was shown, described in "Canadian Thresherman," October, 1906, the builder

having commenced this sort of work only a few years before, on account of the Exhibition, stating that "40 of these engines are now in constant use, price £420."

A truly marvellous-looking machine was illustrated in the Official Catalog, 1862, as Robey & Co.'s patent highway locomotive; this was about as much a sight for the gods, as the old locomotive "Cornwall," L.N.W.R. (England), in each case the driving axle was above the boiler, the latter slung beneath it, so the driving wheels had to be very big, those of the "Cornwall" were and still are 8ft. 6 ins., the largest in the world for the engine still exists and I believe occasionally works though the boiler has long since been put into the correct po-

sition above the driving axle. Robey's engine ran upon four wheels the steersman being on a raised platform over the front pair, driver behind. Two cylinders drove a crankshaft with pinions gearing

rather curious. Although the inspection or insurance of engines in factories, etc., is obligatory, no such demand is made regarding agricultural or general showman's engines, etc., the explosion of which

gave an exceptionally interesting talk on the history of the Association, finally taking up the old-time members, he selected Mr. J. E. Ruby, to whom he paid a splendid tribute and presenting him with an elegant gold-headed cane appropriately engraved. Mr. Ruby responded in a very nice way, going into the history of the Association, and the wonderful growth of business in Western Canada since he came here. Mr. Ruby is leaving the West to take up his home at Smith's Falls, the home office of the Frost & Wood Co., where he has been called to take a larger and more responsible position with his company, and in this connection no man in the Association could be missed more than will our genial

friend, J. E. Ruby, and while we regret to see him leave, we are pleased to know his services have been appreciated and he is receiving a promotion that true merit deserves.

Mr. Mott then desired to call attention to the heavy duties of the Secretary, Mr. Thos. Learie, and understood that Mr. Learie was arranging for an assistant, also that his assistant was of his own choice, and a lady. As the arrangement was to be a permanent one with Mr. Learie, it was felt that the Association should recognize this by presenting Mr. and Mrs. Learie (to be) with two beautiful chairs, which had been sent to the home of the bride, previously. Mr. Learie was very much surprised, but made a most happy response.

After the presentations, a splendid entertainment was given by Professors Wray and Cornwall, and Mr. Faulkner delivered some very entertaining recitations. *Auld Lang Syne* was sung, and at eleven o'clock the return trip was made in the

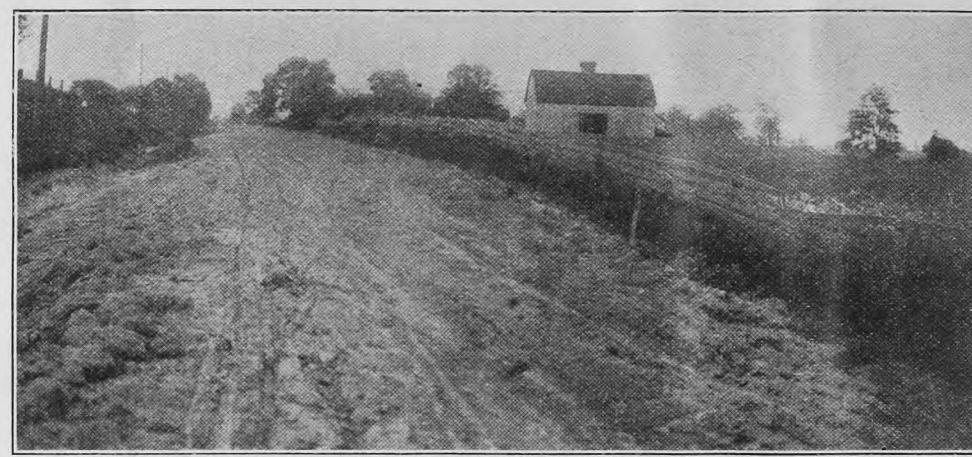
Ruby, H. W. Hutchinson, J. Bryan, Faulkner, S. S. Bean, G. W. Fairbairn, J. A. Acheson, F. D. Blakely, D. McKenzie, Hagel, Ed. Strachan, J. M. Reid, H. Pickles, W. Antliff, J. D. Balfour, J. P. Minhinnick, M. J. Rodney, Tanner, Wm. Bourke, T. P. Bell, David Drehmer, C. H. Whitaker, Geo. W. Erb, L. Hartshorne, E. Cahill, E. E. Lyday, Schiedel, J. A. Turnbull, Geo. Carpenter, C. W. Esmond, E. A. Cutler, I. P. Porter, O. H. Berkey, E. Ellwood, C. Weld, H. P. Hansen, A. C. McRae, H. Anderson, I. C. Nelson, the Secretary, Thos. W. Learie, and E. H. Heath.

Professor of Animal Husbandry.

An official appointment has been made to the Professorship of Animal Husbandry at the Manitoba Agricultural College. W. H. Peters, B.S.A., graduate of Iowa State Agricultural College, and at present assistant Professor of Animal Husbandry on the staff of that Institution is the man selected.

Prof. Peters was born and brought up on a farm in Southern Iowa taking a four years' course in his country high school, and upon graduation entered the Agricultural College at Ames, where he secured his degree graduating with highest honors. During the last year of his course he represented his college at the Chicago International Stock judging competition and was the highest man in horses, a subject upon which he is regarded as a specialist. He also had the distinction of being Editor of the college paper and President of the Agricultural Club. Dean Curtiss considers him as one of the first men in Animal Husbandry who ever graduated from Iowa College.

Prof. Peters has been under consideration for this position for some time but, as he was training the



The Small Grade oftentimes determines the size of the load that can be hauled.

into toothed rings bolted to the large driving wheels.

The South Kensington (London) mechanical engineering collection, one of the finest in the world, contains very little relating to agricultural engines, but there is a good model of the Longstaff-Pullan engine, 1858-9, mentioned in the August No., also the original of a Trevithick engine (1811) used for threshing.

The Royal Agricultural Society dropped the engine trials in 1872, presumably because all makers had got up to a fair level of excellence.

Any mention of agricultural engines would be incomplete without some remarks upon the influence of legislation. This, as in the case of motor cars, has been the great restraining factor. It may not be generally known that about 1830, light steam carriages or motor cars were running in England, constructed by Sir Goldsworthy Gurney, Hancock, Dance, Church, and others.

In 1832, there was a regular service of Hancock's steam omnibuses between Paddington and the City (London), yet by 1836, the industry was practically abandoned, for an Act of Parliament was passed permitting the imposition of such heavy tolls, that the charges sometimes became equal to twelve times those for a four-horse coach. We see that between the late 'forties and late 'fifties traction engines were being developed, but a further Act was passed limiting the speed of all mechanically propelled vehicles, in all parts, to four miles per hour, and obliging them to be preceded by a man on foot, with a red flag; of course this quite crushed out the light and speedy road engine, and retarded the heavy traction engine, which first became really important from a public point of view, about 1863. Other legislation followed, but the Motor Cars' Act of 1896, the result of motor car development on the Continent, finally cleared the air. A point of English Law, re traction on highways is

would often be as dangerous to life as that of any other engines.

Now that disabilities are removed the light steam traction engine, capable of a smart pace, is to be seen in increasing numbers upon the roads of the United Kingdom.

The Annual Dinner of the Winnipeg Wholesale Implement Association.

On Wednesday, December 23rd, The Winnipeg Wholesale Implement Association held their Annual Dinner at Deer Lodge. The dinner last year, seemed to be so very satisfactory, held at Deer Lodge, that the Association decided to hold it there again.

A special car left Main and Portage, at 6 p.m., and while one of the largest cars that the Company have used, it was filled with the best lot of men in Winnipeg, let loose for an evening. Stationed in the front of the car in the smoking department, was Prof. Wigdon's Harp Orchestra, which played stirring music, including "A Hot Time in the Old Town Tonight," all the way out.

Soon after arriving at Deer Lodge, about 6.40, one of landlord Chadwick's famous chicken dinners was started, and for dinners that make one forget that there was anything to do but enjoy oneself, this dinner did it. A good spirit prevailed throughout and frequently across the table—"Here's to your health," etc., and individual and side toasts of this nature were indulged in.

A flashlight photograph was taken, but unfortunately the photo-grapher did not have sufficient light and the picture was not a success.

After dinner a toast to the King followed, by an interesting speech by President Stevens, introducing Mr. W. H. Hutchinson, as one of the old-time charter members of the Association. Mr. Hutchinson



A Harvester String at work in the Argentine.

special car with the harp orchestra in attendance.

Following were the guests of the evening, all members of the Association:

John Stevens, E. A. Mott, J. E.

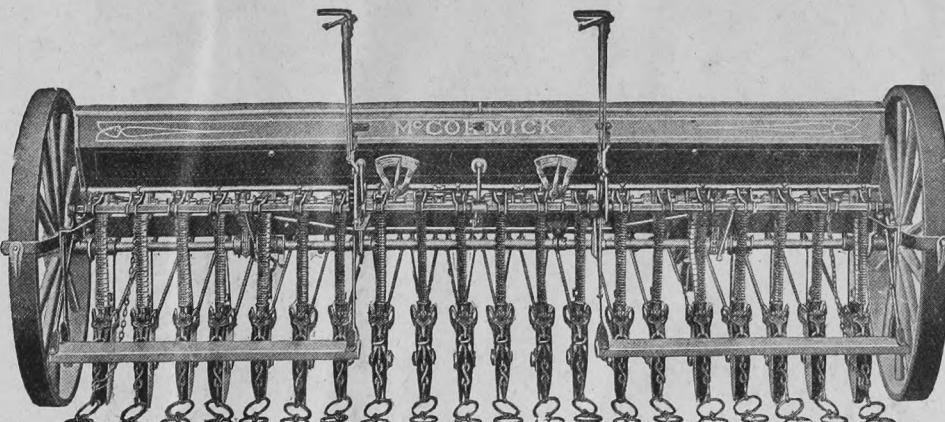
winning team at Iowa for Chicago it was impossible to secure him until after the International Show. Prof. Black attended Chicago at the time of the fair there and secured his consent to come to Manitoba.

McCORMICK DISK AND SHOE DRILLS

THE wonderful agricultural resources of the Canadian Northwest are being rapidly developed—but this development would be impossible without improved machines and implements, and the McCormick line is playing an important part in making Canada the bread basket of the world.

The great advantage of the McCormick drills is that the single disk, double disk, and shoe drills are interchangeable. There is no question but that double disks are superior in muddy fields, single disks in hard and trashy ground, and shoe drills in well-prepared and mellow seed beds. Any of these styles of drills can be changed into either of the other two by putting on either of the other two styles of markers. By doing this, the purchaser will have a drill for all conditions of ground—hard and dry, trashy, muddy or a well-prepared seed bed.

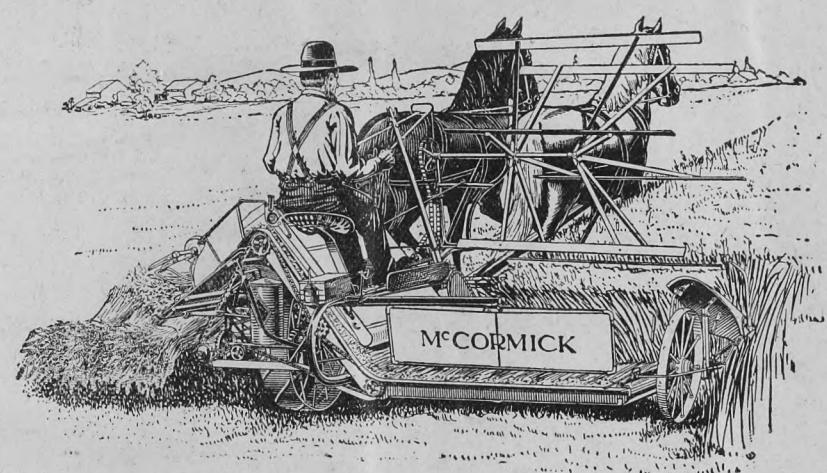
The value of the McCormick drills in sowing grain is that they deposit the seed uniformly, cover it properly, thus protecting it from frosts and insuring an even stand. The farmer who uses the McCormick drill, can always feel assured that he has a machine that puts the seed in the ground in the best possible manner to produce a good crop.



McCORMICK HARVESTING MACHINES

IN materials and workmanship, McCormick harvesting machines are unrivalled, while the machines themselves are abreast with the times—in fact, they are in the lead with modern improvements. The McCormick line for 1909 is equipped with every known device for convenience and efficiency. McCormick machines are built in the largest agricultural machine works under the British flag.

The McCormick line includes binders, mowers, tedders, sweep rakes, side delivery rakes, hay loaders, hay stackers and binder twine. Also a complete line of tillage implements and seeding machines, comprising disk drills, shoe drills, cultivators, smoothing and disk harrows, and scufflers. Also gasoline engines, cream separators, hay presses, wagons, sleighs and manure spreaders.



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INTERNATIONAL HARVESTER COMPANY OF AMERICA

(INCORPORATED)

CHICAGO

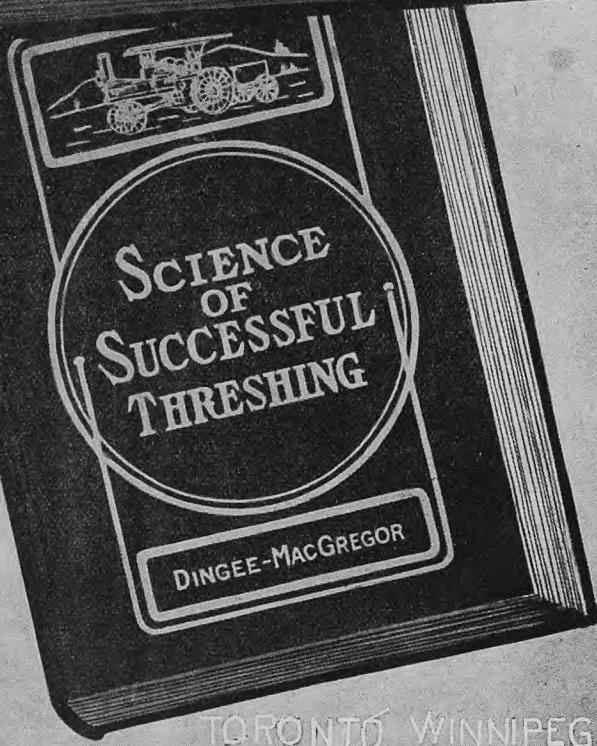
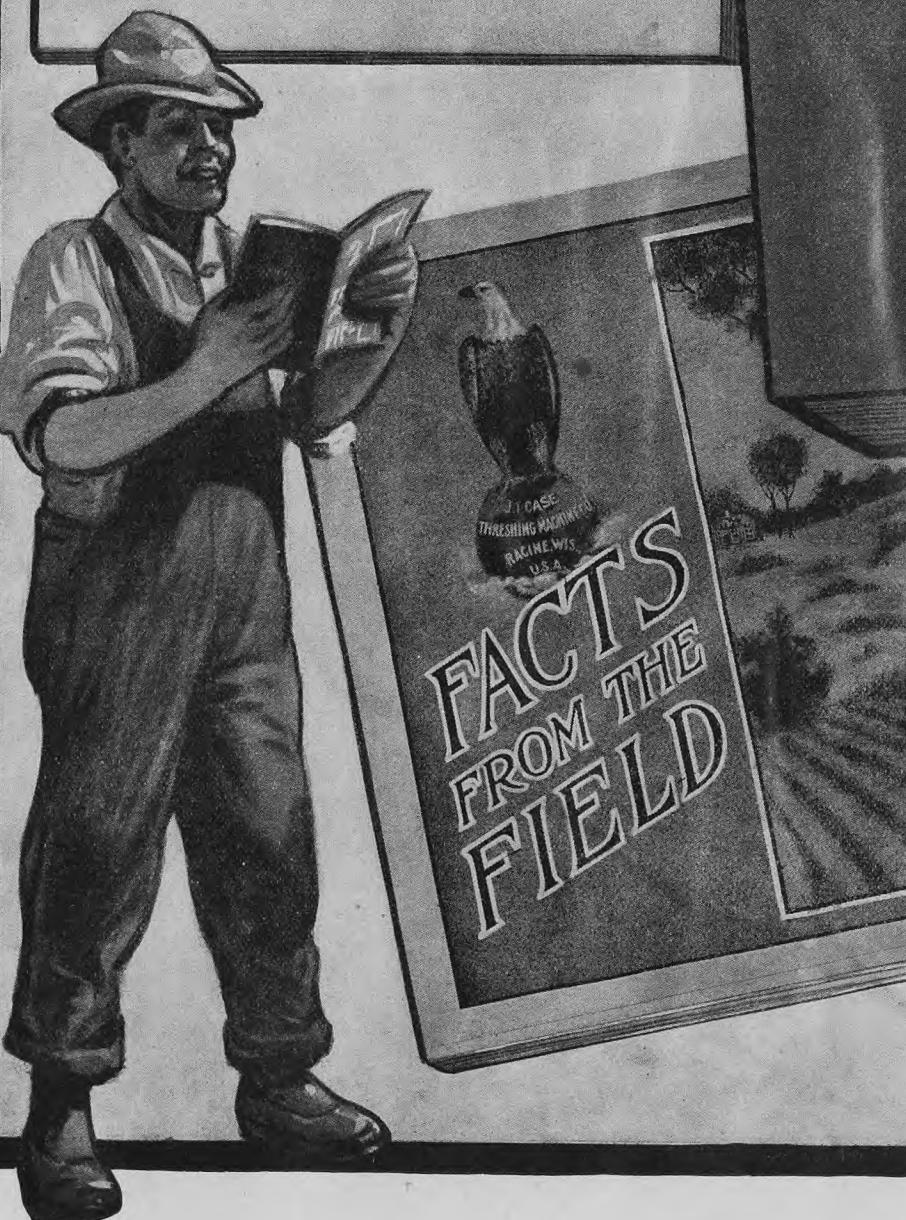
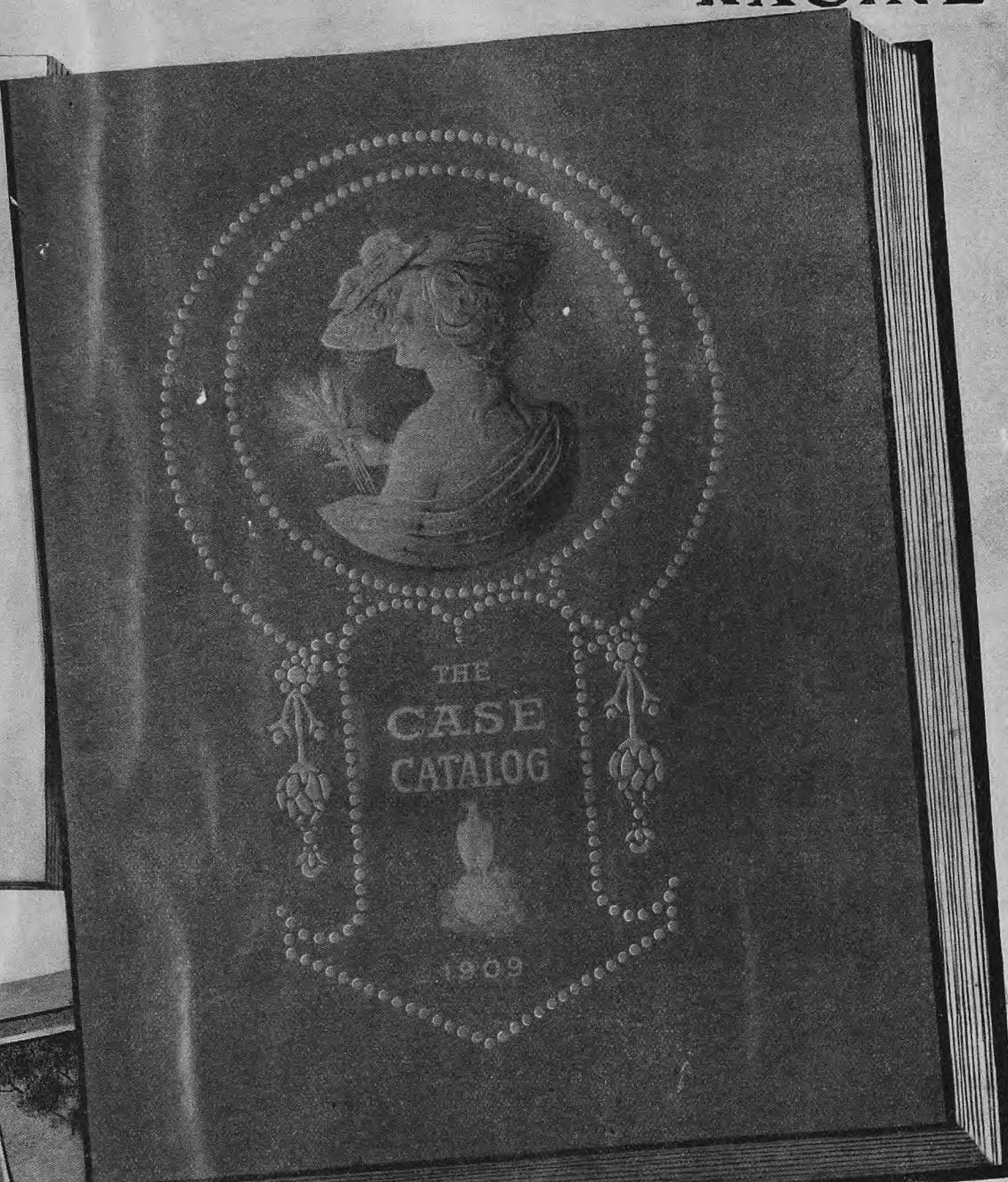
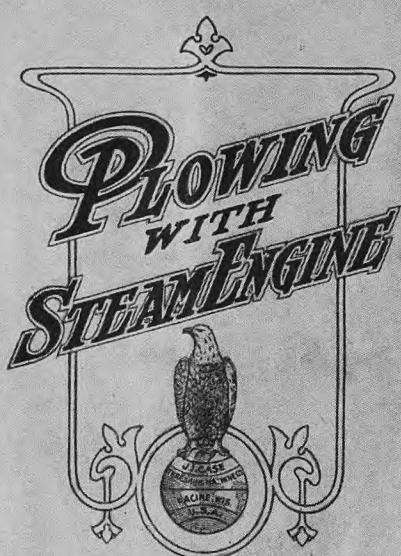
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SEVENTH ANNUAL CATALOG

ILLUSTRATIVE AND DESCRIPTIVE

OF THE

CASE TEN-ROLL HUSKER- SHREDDER



1909

MANUFACTURED BY THE

J. I. CASE THRESHING MACHINE COMPANY,
(INCORPORATED)

RACINE, WISCONSIN U. S. A.

Chicago
C. L. Co.



REGINA CALGARY



SITUATED near Headingley, between the C.P.R. and the old Portage trail, there is an historical spot. In the early days of the old Hudson's Bay freighters, it was a favorite camping ground for the people going west into the then practically unknown. A short distance from Winnipeg it afforded an opportunity in case the traveller forgot something of importance, to return to the city and secure it before going on.

This spot is historical for another reason, in that it was originally opened up for farming purposes,

KENILMEEKY FARM, MAN.

BY E. F. W.

a most necessary thing, on a farm as large as Kenilmeaky.

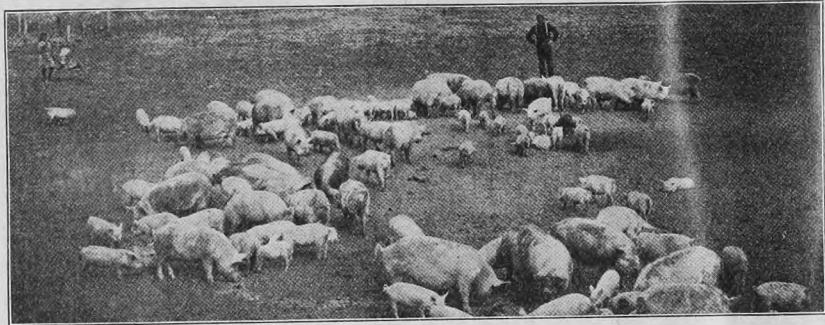
Kenilmeaky Farm consists of 4,000 acres, of which 2,500 is broken. There are larger farms in Western Canada than this, but when we take into consideration the fact that an almost complete system of

A complete American - Abell threshing outfit is kept on the farm, consisting of a 26 h.p. traction engine and a 40 x 60 Toronto Combination separator. The engine is used during the greater part of the summer, for plowing, twenty-five acres being

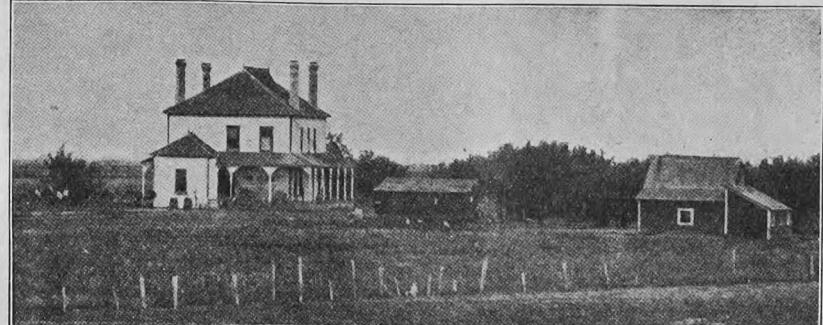
Fifty head of horses are kept on the farm for work, and reserve purposes and a large herd of hogs eat up the waste products.

One of the features of Kenilmeaky is its hennery, which is perhaps the largest thing of its kind in Western Canada. It is a modern structure built according to the most approved plans known to poultry science, with incubators, brooders, etc., the entire arrangement being heated by its own steam plant.

The poultry end of the farm is



In the Hog Lot at Kenilmeaky.



The Farm Home, Kenilmeaky.

by an English nobleman, and run by him under a system of managing tenants. From him it derived its name of Kenilmeaky, and to-day Kenilmeaky Farm is known and spoken of as one of the big farms of Manitoba. Under English management this farm on Sturgeon Creek, was anything but a success. The Englishman, unaccustomed to Western conditions and methods, fell short in his results, so that all that can be said of him in so far as Kenilmeaky is concerned, is that he opened it up for a future owner to develop.

The man who has developed Kenilmeaky Farm up to its present proportions and importance, is Mr. F. E. Kenaston, who is well known in Canadian business and financial circles. Realizing the value of a tract so near Winnipeg, he purchased it and put it under the management of Mr. William Innes, who for some time had had charge of a big farm in Minnesota, for Mr. Kenaston.

Mr. Innes is a Scotchman, born and bred with that love of the land in his veins that has made Scotland's farms the envy of the world. Coupled with a love for agriculture, is an inborn ability to manage men

mixed farming is carried on, we can see that the amount of labor involved is such as to make the farm much larger than the mere acres which it contains.

In 1908, 1,800 acres were under crop, consisting of 600 acres of wheat, 800 acres of oats and 400

the average day's turn over.

At the time the writer visited the farm, they were threshing barley, and some idea can be gained of the amount being threshed, when it took nine stook teams to haul the sheaves in, and five grain teams to haul the grain away, the

in charge of Mr. Innes' eldest daughter, who has made a particular study of this branch of the business, and to whose able management its success is due. Chickens, ducks, geese and turkeys are raised, all of which yield a handsome profit from what goes to waste on many of our Western farms.

The farm buildings are large and commodious and well arranged, and the house is of such size and proportions as to do justice to any English manor. When we take into consideration the fact that during the summer, from 35 to 40 men must be housed and fed, we can see the need for a large farm house.

Kenilmeaky on a day in midsummer, is a most delightful spot to visit. With its rambling fields waving in the glittering sunlight, with a view that looks westward to the Rockies, and with a farmstead that bespeaks thrift, and to these coupled a hospitality on the part of the manager, that is at once open and soul-warming, the visitor to Kenilmeaky, will go away with an impression that will remain long in the pleasant corners of his memory.

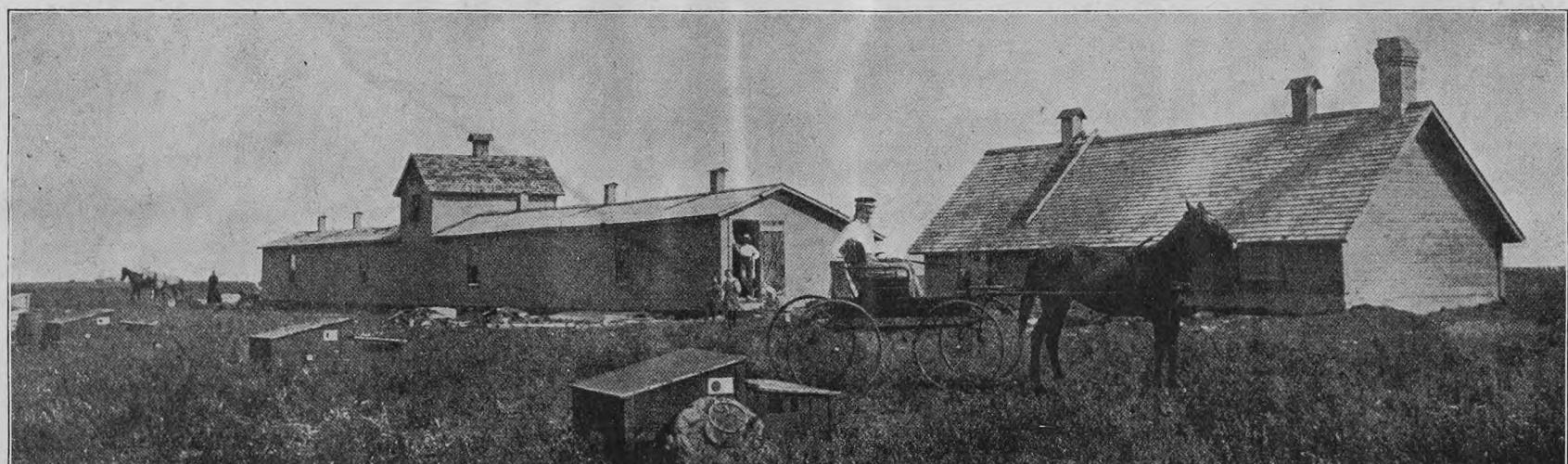


A Morning Scene at Kenilmeaky.

acres of barley. All of these three crops yielded heavy, especially the barley. In one field there were 360 acres, and when the writer saw it just before it was threshed, a prettier field of stooks can scarcely be imagined.

hauls in each case being short.

About 100 head of cattle are kept on the farm, a great many of them being milch cows. The milk is taken to Headingley every morning and shipped into Winnipeg, by the electric car.



The Hennery, Kenilmeaky. Miss Innes in the buggy



THE

FLYING DUTCHMAN

STANDS FOR QUALITY



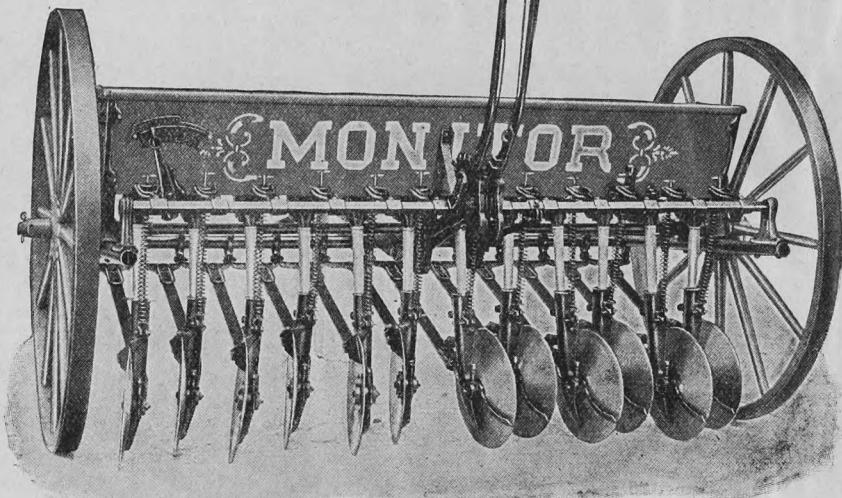
A FARMER buying a plow or other farm implements cannot protect himself in the same way that he does when buying a horse. He can examine the horse for ringbone, curbs, spavins and sweeney, put it through the paces to test its wind, and otherwise discover its blemishes and deficiencies. He cannot tell what is hidden by the bright paint and smooth varnish on the plow. It has no tell-tale teeth, its endurance is an unknown quantity, and its efficiency problematical. The beams may be low carbon steel that has the size and weight, but lacks strength. Smaller beams of higher carbon might stand twice the strain. The coulters may look all right, but who can say the first stone won't turn the edge like a piece of tin? The malleable and cast iron may be without flaws and still be as brittle as glass. The moldboard and share may look good and yet be a cheap grade of steel. This is where the trade-mark of a house with a reputation to sustain becomes of value to the farmer. It is a guarantee against these things.

EVERY IMPLEMENT MANUFACTURED BY THE MOLINE PLOW CO. HAS THE TRADE-MARK THAT
INSURES QUALITY.

Some Worthy Members of the Flying Dutchman Family are :

MONITOR

DRILLS

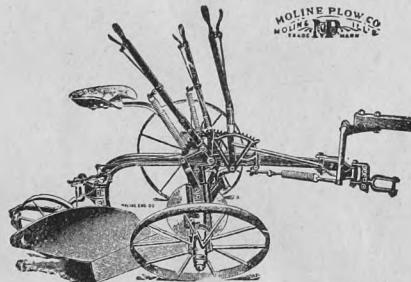


Interchangeable SHOE, HOE, SINGLE or DOUBLE DISC. Has double gear feed, front delivery discs that get the grain in at a uniform depth, hard oil cups, a strong compact frame, long wheel boxes, made to work right, made to wear right, made to give satisfaction.

THE GOOD ENOUGH SULKY PLOW

Sold with either Stubble or Breaker Bottoms.

The Best Plow on earth for the money.



THE SUCCESS HARROW CART

Fits any Harrow. Will not tip over on a side hill. Easy on the driver and team. THE GREATEST LABOR-SAVER of any single piece of Farm Machinery.

IN ADDITION TO THE ABOVE, WE SELL

The Famous Scotch Clipper Walking Plows, Best Ever Sulky and Gang Plows, Disc Plows, Canadian Chief Gang Plows, Flying Dutchman Engine Gangs, Economy Disc Harrows, Genuine T. G. Mandt Wagons and Bob Sleds, Ideal Feed Mills, Webber Fanning Mills, National Manure Spreaders, Munro-McIntosh Carriages and Cutters, etc., etc.

Write us for circular giving full description.

Canadian Moline Plow Co.
WINNIPEG

Distributing Warehouses: REGINA, CALGARY, SASKATOON.

As the great wheat fields spring up in the West, the value of fences on the farm becomes more and more apparent to the farmer. When wheat (the great staple crop of the newly-opened West, the only crop on which the new settler on the prairies can depend for profit and the maintenance of his family) begins to fail to produce remunerative crops, it is but natural that the farmer turns his attention more and more to the different kinds of live stock and to a mode of tilling his soil that will bring it back to its original state of fertility.

The time is fast approaching when sheep and cattle can not be raised on our prairies of the West without at first preparing and building good fences to enclose the stock in order to protect the owners' and their neighbors' crops from destruction. The farmer finds it even cheaper in these days, to fence his stock than to watch it, and many a Western farm boy and girl, who in the past have herded the cattle and sheep, will each and every one cast their vote in favor of a good fence to restrain the stock. Many is the time I have seen boys and girls out on the lonesome prairies during the long days of summer, faithfully watching papa's cattle and sheep, when they should have been in school, and my sympathies have gone out to the little fellows, especially in the cold days of early autumn, when they would seek the sunny side of some hay stack or some shelter from the cold and piercing winds.

But, boys and girls, better times are in store for you; the great wire factories have so reduced the cost of wire and wire fencing, that it is now cheaper to build fences than to board the boy and girl, and besides this, the farmer is learning that good fences help him to make more money and this more money will be used to buy more and better schooling for the boys and girls.

What an aggravation to the farmer who has a fine crop of grain growing, some day on arriving home from town to find his herd of forty or fifty head of cattle have broken out of the pasture, and are all in the field, or have trampled all over the farm, leaving waste and destruction of his fine crops in their wake; and the aggravation is still more acute when a neighbor's cattle have broken out and done the damage, and the chances are, ten to one, that hard words and feelings will ensue, and in many instances families on adjoining farms have become enemies for life over the results of maintaining a poor division fence between farms. Damage suits have been brought and fought over for years at great cost of friendship, money and time, growing out of poorly-constructed and poorly maintained division fences.

So I say, brother farmer, when we come to need fencing in our business, let us study the question of fence construction, and whenever or wherever we build a fence, let

Good Fences and Their Value

By E. F. W.

us build for permanency, and for efficiency. The difference in cost between a barb wire fence and a woven wire fence, that will hold cattle, sheep and hogs, is now so small that scarcely any up-to-date farmer is to-day using the barb wire except for the upper and lower wire, the latter to prevent the pigs from rooting under and the upper wire to prevent the cattle and horses from damaging and sagging the upper wires of the woven wire fence, so I say the barbed wire has served its purpose, and like many other good things, is being relegated to the rear, and something better is taking its place.

Many good fences are on the market, and all have their good points and nearly all will make a good fence if the fence is properly constructed. However, the lay of the land will make a difference in building a fence from the different varieties of fencing on the market. On level land all will stretch up nicely and be all right, but on hilly and uneven surfaces, care should be used to select a fence that will not "buckle" when building over the hills and hollows. Care should be taken that after the fence is finished, each wire will stand its share of the strain, and on this point the make of fencing has much to do. Be sure you are right on this point, then go ahead.

Many farmers make a fatal mistake by using too small a post for corner and gate posts. A small post, when the stretcher is applied, will be apt to draw into the ground more than a large post; the same will be true after the fence is finished and a prolonged wet spell comes along, as the ground around the post becomes softened and the small post will be moved over by the tension of the wire and then the fence becomes loose and faulty. I think the main posts should be at least $7\frac{1}{2}$ or 8 feet long and at least 7 inches in diameter at the top. This gives a post that will not spring and belly as the tension is applied, and this will allow the post to be set $3\frac{1}{2}$ and 4 feet in the ground, where it gets below the influence of the wet, soft condition of the soil nearer the surface.

In setting the main posts, figure your post hole so that the tamping will all be done on three sides of the post; then set the post so that the pressure of the post will come against the hard bank that has not been disturbed in digging the hole. Many ways of anchoring the main posts are used, and many are good, but whichever way is used, be sure that a good job is done, on a basis that the life of the fence is to be twenty-five years. Never use a weak brace; a good piece of 4 x 4 is none too good, and a 4 x 6 is still

better; sometimes a 4 x 4 will get broken and then there is trouble all along the line and a job will be on your hands to put another in its place and still have the fence as tight as before. Better put in a good one at the start.

Where cattle and horses are to be pastured, a four-inch post is small enough, and nothing smaller than this should be used, especially for division or line fences. I expect that many farmers will disagree with me on my mode of setting the main line of posts; but I have found my method pleases me, especially as it saves time and I believe the post will be more solid under all conditions. My method is to drive the posts. Back in Ontario, on the clay soils and marshy, wet places, posts that were sharpened and driven would in ten to fifteen years, be heaved entirely out of the ground by the action of the frost, so that there it was necessary to dig holes and then set the post by tamping, but here in the West the peculiarity of our soil is such that a sharpened post does not heave by the action of the frost, hence driving them will be all right.

The posts, when brought from town (which should be in the winter) should be unloaded near the house, where the chips, which will accumulate when sharpening, may be used by the good housewife for kindling fires, and I am sure she will highly appreciate them. Now with a good, sharp, heavy handaxe, the sharpening can be done during nice days in the winter, when there is a scarcity of work around the place. Now there is a good way and a poor way to sharpen a post, and if the proper way is used, considerable length of the post will be saved, so that when the post has rotted off, it can still be used for low fences where a five-foot post will answer, so that a post may really have two lives, and a part of the process consists of properly sharpening the post on the start. I am a believer in putting the small end of the post down, so would sharpen the small end. Commence to sharpen about twelve or fourteen inches from the end, but do not hew on a straight line to the center of the point, but hew on a curve; do not hew to a sharp point, but leave the point two inches in diameter. It will drive just as easily and will last longer, and will sustain the post better than if sharpened to a point. Hew off the four sides of the post, then take off the resulting corners, leaving an oval octagon-shaped point. Now chamfer off the other end of the post so as to leave it about three inches in diameter. This will prevent the post splitting when driving with the iron maul. In setting or

driving posts, a barrel of water should be carried in the wagon. Make a hole with a crowbar, say sixteen inches deep, spread the hole with the bar as much as possible at the top, now fill the hole with water and if the ground is very dry keep two or three holes filled with water ahead of the driver so it will have time to soak into the ground a little. The water softens the ground and seems to lubricate the post, so that posts can be set in the driest soil at any time with little effort. Now to the scientific part of the method. By driving the sharpened post, the soil is forced back from the post, thus becoming more compact than ever; hence the post sets more solid than if placed in a hole bored the exact size of the post and much more solid than if the hole was dug and the post tamped in as usual, and a man will set double the posts in a day by driving than he would by digging the holes and not be nearly so tired at night.

If properly sharpened, a post need not be driven more than twenty to twenty-four inches into the ground, to be perfectly solid, especially on dry upland soil, so we should keep in view the use of the post the second time.

For cattle and horses and for all line fences, nothing less than a 42-inch woven fence should be used. First stretch the woven wire and staple securely, using a good, long staple for cedar posts; put the bottom of the fence six inches above the ground, then stretch a barb wire four inches above the top of the woven wire and a barb wire three inches below the woven wire. Here you have a fence that will be a joy as long as it lasts, and one will never need to fear having to get up in the night to drive the cows out of the field; a fence that will restrain the bull, keep the pigs at home, be sheep tight and go a long way towards keeping dogs out of the sheep fold. Such a fence as this, built nice and straight, will add more than its cost to the value of any farm, will be a matter of comment by nearly every passerby, and will be an annual source of income during its whole life. By the use of good fences, much is saved that annually is lost on the fenceless farm. The pigs and sheep can be turned into the grain fields after harvest, to glean everything left by the harvester and thresher. The fields can be gleaned by the cattle sheep and hogs, after the grain is removed, and by sowing rape in the small grain, from two to twenty lambs per acre can be fattened on the rape every fall, according to whether the season is dry or wet. I have seen as high as twenty dollars (\$20.00) per acre made from such a rape crop used for fattening lambs, after twenty-five dollars (\$25.00) per acre of barley had been taken off the same land the same year. I consider that money invested in farm fences up to a certain limit is a much better investment than money put in the savings bank.

DRILLS
DRILLS
DRILLS
DRILLS

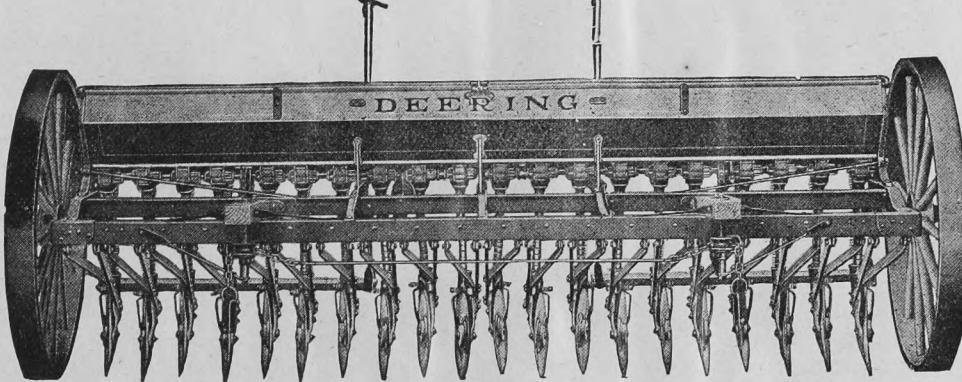
DEERING

ABSOLUTELY
POSITIVE
AND
ACCURATE

Points to Consider Before Buying a Drill

1. Will it open the furrow properly?
2. Is the feed absolutely positive and accurate, so that it never bunches the seed—never skips or chokes?
3. Are the grain conductors the "non-clogging kind?"
4. Will it sow the quantity desired?
5. Is the seed delivered to the bottom of the furrow?
6. Is the seed covered properly?
7. Does the main frame give the necessary strength and durability to the entire machine?
8. Is the drive divided so that half the machine can be used to finish the short end of the field if necessary?
9. Are the drag bars attached in the line of draft?
10. Do the drag bars hold the markers so that they cannot twist out of position?
11. Do the drag bars have a high clearance to avoid accumulation of trash?
12. Are the disk bearings durable and practical?
13. Do the disks have good clearance so that clods and trash pass freely between the sections?
14. Are the scrapers adequate?
15. Is the indicator absolutely positive?
16. Has the grain box sufficient capacity?
17. Are the markers interchangeable?

By purchasing one of these drills you can change it into either of the other two by putting on the other style of markers.



Made in three styles:
Single disk, double disk
and shoe.

Each style made in
four sizes: 14, 16, 20 and
22 markers.

ALL of the above questions are answered in the affirmative when asked concerning the Deering drills.

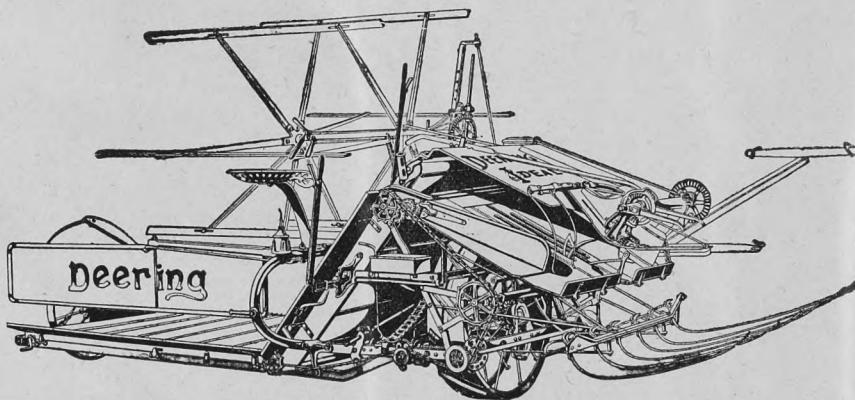
When the field is seeded with a Deering drill, the furrow is properly opened, the seed is delivered at the bottom of the furrow evenly and in just the desired quantities, and it is properly covered.

The fluted feed of the Deering drill is absolutely positive and accurate. This feed is divided and is driven by chain from the main axle, and will handle small grain, peas, beans, beet seed, etc.

If you want a good drill, buy a Deering.

DEERING TILLAGE IMPLEMENTS AND HARVESTING MACHINES

THE Deering line of tillage implements, seeding and harvesting machines includes machines of demonstrated quality. The tillage implement line includes: out-throw disk harrows, peg tooth harrows, lever smoothing harrows, sectional cultivators and scufflers. Deering harvesting machines include: binders, reapers, mowers, tedders, hay rakes, sweep rakes, side delivery hay rakes, hay loaders, hay stackers, knife grinders and binder twine. When you want a drill, tillage implement or harvesting machine, call on the Deering local agent and he will give you full particulars concerning the machines he handles. Write for catalog.



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INTERNATIONAL HARVESTER COMPANY OF AMERICA
(Incorporated)

CHICAGO

U.S.A.

THE variable expansion governor used largely on stationary engines is generally, though not always, placed on the main shaft and acts directly on the eccentric. One style shifts the eccentric straight across the shaft just like the shifting eccentric reverse gear, explained in a previous lesson, only it does not shift the eccentric far enough to reverse the engine. The other style of shaft governor rotates the eccentric around the shaft. Both styles of governors act just the same as hooking up the reverse lever, thus changing the point of cut-off. It can readily be seen that a governor of this kind would be hard to adapt to a traction engine which is already equipped with some device, in most cases, to change the position of the eccentric. This leaves the throttle

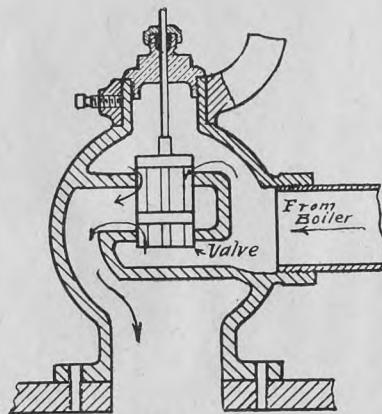


FIG. 47.

governor as the only available governor so far for the traction engine.

The style in universal use is what is known as the spring loaded type. The balls are made light and the governor is run at a high rate of speed, usually from about four hundred to four hundred and fifty revolutions per minute. When the balls fly out under the action of centrifugal force, they are obliged to overcome the action of a strong spring which tends to hold them in a position of rest. These springs are so constructed that it takes more centrifugal force to overcome their resistance the farther the balls move outwards. In other words, the resistance of the springs increases faster than the centrifugal force does; thus making them STABLE governors; that is, governors which always assume the same position for a given rate of speed.

The result of this arrangement is to prevent any sudden variation of the pressure of the steam in the cylinder and to maintain the speed of the engine practically constant.

Figure 47 is a sectional view of the body of a well-known throttle governor. The body is made of iron and the valve and valve seat of brass. Steam flows into the bottom part of the body both from the upper and the lower sides of the valve. In this way the valve is balanced, that is, it receives as much pressure on the top as on the bottom and all the centrifugal force of the balls has to overcome is the weight of the valve and the tension



Practical Talks to Threshermen

Conducted by PROFESSOR P. S. ROSE

TALK NO. XVII.

REGULATION OF THE SPEED OF THE ENGINE.

of the springs which hold them back.

The method of regulating the speed of the engine by means of a governor is accomplished in a variety of ways depending upon the style of the governor. Diagrams illustrating these speed regulating devices are shown in figures 48 and 49. In figure 48 the valve is held open when the governor is at rest, by means of the fork acting on the collar at A. This fork is actuated by a long spiral spring whose tension can be made greater or less by means of a thumb nut on the end, thus putting either a light or a heavy load on the valve to hold it up and open. The lower head is stationary, while the upper one is free to move downward. The distance the valve is raised from its seat by the fork A is regulated by the adjusting nuts. If they are screwed away down on the valve stem the valve will be lifted high and it will require a wide movement of the balls and consequently a high speed to bring the surface C of the nut N low enough to close the valve. It will also be perfectly clear that if the adjusting nuts were screwed up near the top of the valve stem that the valve would be forced lower and the port opening would be less, consequently when the balls move out the supply of steam will immediately be throttled and the speed of the engine reduced. When the nuts are screwed clear down the port opening may be so wide that considerable movement of the valve will be necessary before the steam supply is throttled and the speed of the engine reduced.

It will also be clear on a little consideration that the adjusting nuts could be screwed clear down or left out entirely and the adjustment made by means of a thumb nut S which could be raised or lowered so as to strike the end of the valve stem when the engine attained any desired speed.

Another scheme of regulating the speed is sometimes adopted. In this plan the valve stem is either shortened or lengthened by some device situated between the fork A and the nut N. The effect of this device is to either raise the valve from its seat or lower it, depending upon whether the valve stem is shortened or lengthened.

All of these schemes are made use of in the governors applied to traction engines and they are very effective when it is desired to run the engine at a considerably different speed. They must of course be used in connection with the speeder spring connected with the fork A that puts a load on the valve. This load must be adjusted to correspond

to the change in speed, for if the speeder spring were under too great tension the centrifugal force developed by the balls at a reduced speed might not be sufficient to overcome its resistance. The speeder spring itself, as the name implies, can be used to change the speed of the engine within certain limits by making a greater speed of the balls necessary in order to develop enough centrifugal force to overcome its tension.

Another scheme for regulating the speed is shown in figure 49. In this type of governor the valve stem is threaded through the sleeve B and is provided with a thumb nut at the top with which it may be raised or lowered. A jamb nut below locks the valve stem to the sleeve. A collar at A, fastened to the sleeve, is actuated by the balls, which, when they move outward under the action of centrifugal force, push both the sleeve and valve stem down and tend to seat the valve.

When the adjusting nut is screwed up, it lifts the valve farther away from its seat and consequently the balls must move out farther in order to seat the valve. This can only come about by rotating them at a higher rate of speed, but since they receive their motion from the engine, the latter must also run faster before the governor will begin to govern. If the adjusting nut is screwed down, the valve is brought nearer to its seat and hence when the balls begin to move the valve immediately begins to cut off the

much power. Under these conditions it is better to make the change in speed by changing either the pulley on the governor or the one on the engine shaft so that the governor will run at its normal speed.

Governors of this type are not provided with a speeder spring, but heavy, curved springs are attached to the balls and to the rotating head C, which resist centrifugal force and tend to bring the balls back to a state of rest.

As before stated, the speed of the engine may be changed by changing the sizes of the pulleys in such a

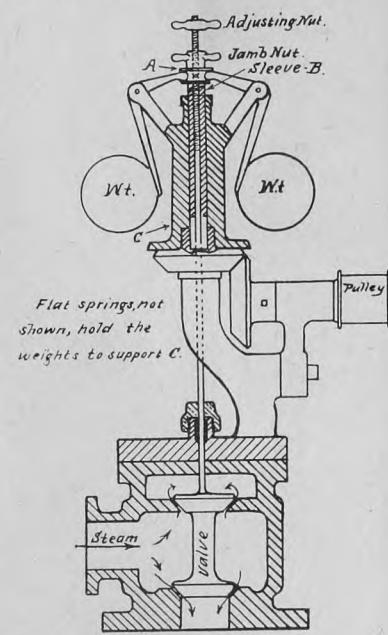


FIG. 49.

way that the governor will still rotate at its normal speed even though the speed of the engine be greatly changed. In many cases and especially where close governing is required at a low speed and the maximum power of the engine is required, this is the best way.

The rules for finding the diameter of pulleys are as follows:

TO FIND THE DIAMETER OF THE GOVERNOR SHAFT PULLEY.—Multiply the diameter in inches, of the engine shaft pulley, by the desired number of revolutions of the engine per minute and divide the product by the speed stamped upon the governor; the quotient will be the diameter of the governor pulley needed.

TO FIND THE DIAMETER OF THE ENGINE SHAFT PULLEY.—Multiply the number of revolutions stamped on the governor by the diameter of the governor pulley and divide the product by the speed at which the engine is to run; the quotient will be the required diameter of the engine shaft pulley.

Most throttle governors are equipped with what is called a Sawyer's lever, that is, a lever on the side having a forked arm which engages with a collar on the valve stem. Wires are run from the ends of this lever to the engineer's platform, which enable the engineer to open or close the governor valve forcibly regardless of how the engine may be set, and thus control the speed of the engine by hand.

A large number of governors are

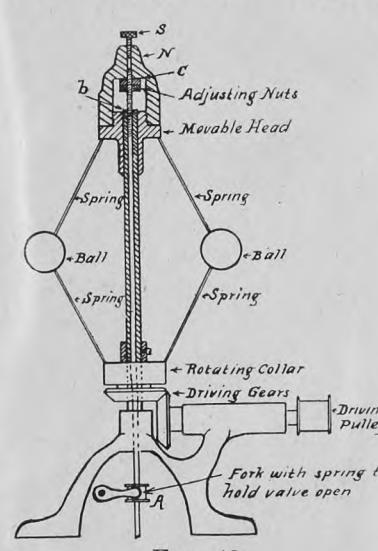


FIG. 48.

supply of steam and reduce the speed of the engine. If the speed of the engine is reduced much below normal with this type of governor the steam passages are so much restricted that the engine, while it may govern very nicely, will be supplied with steam at such low pressure that it will not have very

REEVES ANNOUNCEMENT

WE want to say something of more than usual interest and importance to the readers of the "Canadian Thresherman and Farmer" and, therefore, cannot take up any of the space available for our use with pictures or general description of the machinery about which we want to tell you.

A subject that is now being considered, investigated and discussed in almost every quarter of the country, is that of Steam Plowing, and it certainly is a subject worthy of the most serious consideration. In many quarters, large tracts of land are being brought under cultivation by the aid of the steam plow, and in such sections the purchase and use of a steam plowing outfit is an ordinary everyday occurrence, and when the outfit so purchased is one that has been proven successful, the result is a satisfied buyer, and a profitable investment. Care, therefore, should be exercised by the buyer and he should be certain before completing his purchase, that he is selecting the best, otherwise disappointment will surely follow.

We, for many years have built the most satisfactory plowing engine that has been offered to the farmers of America. The Reeves Cross Compound Double Cylinder Plowing Engine has been not only the pioneer in the work of plowing, but has been continuously used for that purpose for years with the most gratifying experience. The only thing lacking to make plowing with a traction engine an unqualified success, was a suitable plow, which until the production of the Reeves Flexible Frame Steam Lift Engine Gang Plow, had never been found. We were constantly importuned by the buyers of our engines purchased for plowing, to provide a plow that would be a fitting companion for the engine, and finally decided in the interest of our customers, to take up the matter. We sent our experts to the fields for the purpose of investigating conditions and to learn what not to build, for we desired, if possible, to avoid the mistakes common to so many who were building plows for use with steam power.

The success of our efforts, first to avoid mistakes, and second, and really most important, to produce a plow that would fill this urgent demand, were beyond our most sanguine hopes. The plow was tested for months under the most trying conditions in many sections, and in different sorts of soils, to be assured before asking anyone to invest their money, that it was worthy to bear the name "Reeves," which in the machinery world always has stood for merit.

We found as a result of our experimental work, that the plow could not only be safely admitted to a place in the Reeves line, but was worthy to stand at the head. It has been recognized by those having knowledge and qualified to speak, as being one of the most important mechanical productions of the decade, space forbids our going into detail, and we, therefore, cannot as we would like, tell you here all about the Reeves Steam Plow. The main point is, are you interested in the steam plowing proposition? Have you land of your own to plow, either large or small fields? Do you wish to engage in a profitable business?—that of plowing for others? In either case, write us for our catalogs telling you all about the Reeves Plowing Engine and the Reeves Flexible Frame Steam Lift Engine Gang Plow. They are free and will be sent upon request.

We may say here that the Reeves Plow is built in numerous sizes, suitable for engines as small as 16 Horse Power, and large enough to keep an engine of 40 horse power busy. We can furnish any size desired, and to, if you have an engine, of any make, and desire to procure a plow to operate in connection with such engine, we can furnish it, for the Reeves Plow is so made that it can be attached to any make or size of engine.

We believe you could get better results with a Reeves engine, but the Reeves Plow will do more for you when operated by your own old engine than any other plow attached thereto.

Now in conclusion, we want to say that the Reeves Steam Plow is just as well adapted to small fields as to large, and it is not necessary that you continue the old method of farming just because your fields are small. The plow is designed to meet your requirements and will do it in a most satisfactory way.

Just one word of caution! We already have booked many orders for plows for 1909 work. Do not delay in arranging to place your own order, for our ability to supply all that are wanted will depend upon the time orders are received. Orders will be cared for in turn, and an early order means an early shipment. Begin this New Year right by placing your order now, or by sending at once for catalogs and information desired to enable you to promptly consider the proposition.

We extend to you the greetings of this holiday season, and our wish is that you may pave the way for your future prosperity by getting busy at once on the steam plowing proposition.

WRITE US.

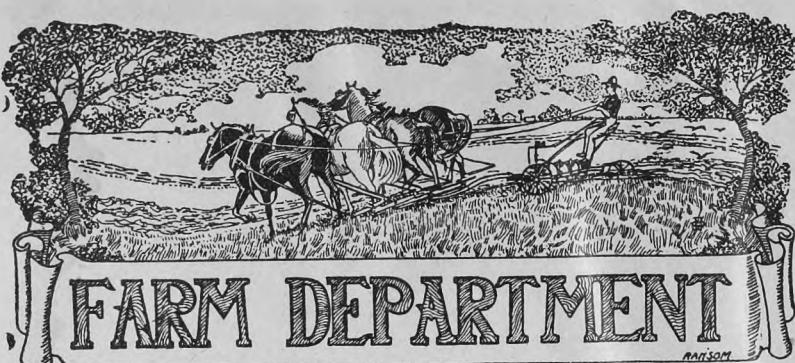
DO IT NOW.

REEVES & COMPANY

COLUMBUS, IND., U.S.A.

Canadian Branch: REGINA, SASK.

We manufacture Threshing Machines, Clover Hullers, Saw Mills, and Corn Shellers, as well as Double Cylinder Engines and Steam Plows. If you are interested in any of these, write us.



FARM DEPARTMENT

Exterminating Weeds.

Last year I had forty acres of land that was full of wild oats, more wild oats than wheat, and I cleaned it in the following manner: I plowed said land soon after threshing, about $2\frac{1}{2}$ inches deep, and harrowed it about smooth. After harrowing, I rolled it with a heavy land roller. Now in the spring, I plowed that land again, very late, three inches deep, and sowed barley. When I plowed the land it was green like a prairie, as the wild oats were growing fast. You should see that barley. It is clean, free from wild oats and any other weeds. I plowed said land again this fall and expect to seed it to wheat next spring.

But that is not all you have to do, if you want to have good crops. Plow your land finely, harrow it well and take care in seeding. You cannot make it too good. I always plow where I expect to seed wheat, in the fall, and then harrow it, and in the spring it is ready for seeding. After seeding, I pack the soil with a pulverizer and packer, as I found out that it keeps moist longer when I pack it, and at harvest the binders run much easier. I always use good implements.

The crop was not very good this year here, I had an average of $15\frac{1}{2}$ bushels of wheat per acre; oats 31 bushels per acre, and barley 25 bushels per acre.

Now, Brother Farmers, I will give you a good remedy for the so-called Sow thistle. Take an ordinary wooden pail, fill it with warm water and dissolve one pound of blue stone in it. Cut the Sow thistles when about $2\frac{1}{2}$ feet high, close to the ground. Pour over them the solution, and if not enough use two or three pails, according to the patch you have to cover. Canada thistles may be treated in the same manner with good results.

PETER C. REMPEL.

Winkler P.O., Man.

A Bad Deal.

Being a subscriber and a constant reader of your paper, also a resident of Radisson, which is famous owing to the mysterious manner in which several threshing machines were reduced to ashes. May I inform you, Mr. Reader, there is no mystery whatever about it. The people in Radisson and surrounding coun-

try, know who lit the match, thanks to Royal N.W.M.P., and one of the most skilful detectives Chicago could produce. Though the guilty ones are spotted, there is not yet sufficient evidence to have the guilty party arrested, but it is only a matter of a little time.

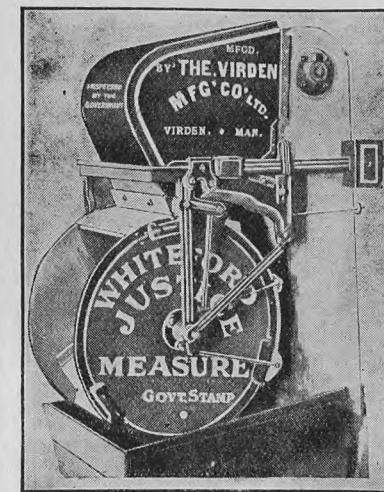
Having read the experience of some of the threshermen, I will attempt to give some of mine, also some ideas I entertain on the subject. With a lot of farmers the prevailing idea is that the thresher is a bare-faced robber. They appear to think a man with a big up-to-date outfit, employing close on one dozen teams and twenty-five men, should thresh for them at 6 or 7 cents a bushel and board his own crew. The time has come in the fair Saskatchewan of ours, when the thresher must have more money and have it a whole lot sooner than he gets it in the majority of cases. The intelligent farmer who will figure up a thresher's expenses, will never make a howl about the price. But there is another class of farmers or agriculturists, as they call themselves nowadays, that would howl about the weight they got, the amount of feed and water the teams used, if you did their job for nothing and paid for the privilege.

Now, Mr. Reader, I am not accusing all the farmers. I have threshed for lots of them that did all in their power to make everything convenient, and were as agreeable as it was possible for any man to be. The man that tries to use me right, is the man I will do all I can for in the way of a good, quick job. The eternal grouser does not make anything by it. If you get one of these people to haul bundles for a few days, they will come along with a pair of cayuses and a rack about two by twice. When they have their little load on it is so small on top it would split a rain drop. If it is possible to miss their turn at the machine, you may bet ten to one they are just the ones that will do it. When the whistle blows for noon or night, they can race all the way to the stable, an occurrence that never happens in the morning or coming to work after dinner. They like a nice, quiet smoke in some field where there are some nice, large ravines, where they can keep out of sight or think they can, occasionally they get fooled.

It costs more money to run an outfit than it should. The only way

WHEN USING A

Whiteford Standard Measure



THIS is an Automatic Measure for Threshing Machine use. It gives stroked measure, regardless of weight. It never has to be adjusted, is always ready, it assures your customer of a square deal. It gives the Thresherman Absolute Protection

Because

The Dominion Government have made it a Legal and Standard Machine for Threshers' use.

This Fact

convinces anyone that it will be Fair

Every Measure is inspected and stamped by a Government Inspector, who issues a certificate for it. This certificate is then sent with each measure.

We build and furnish complete baggers, high Dakota style, or we will furnish the Measure to attach to any make of Elevator.

AGENTS WANTED

Write for Circulars and Prices to

THE VIRDEN MFG. CO., LTD.

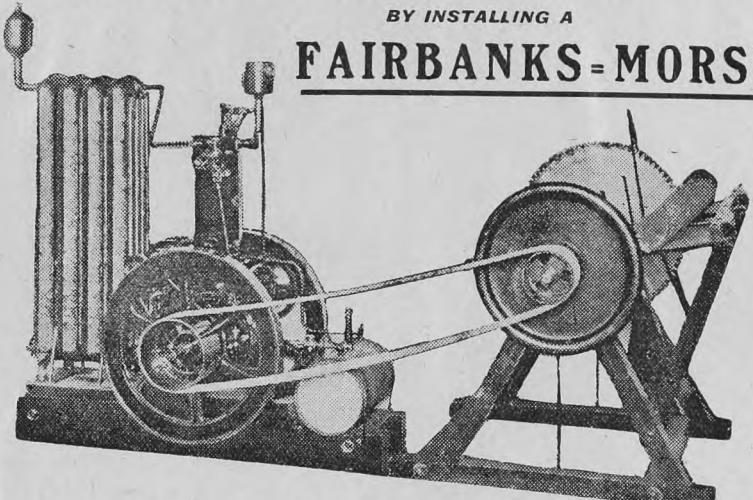
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VIRDEN, MAN.

MAKING THE FARM PAY

BY INSTALLING A

FAIRBANKS-MORSE



GASOLINE ENGINE and WOOD SAW

One Man writes:

"The 2 H.P. "Jack-of-all-Trades" Gasoline Engine I purchased from you a short time ago, works fine. We have not had the slightest trouble in running it. We cut seven cords of Oak Wood in three hours, at a cost for gasoline of about six cents per cord."

BY putting in an OIL-COOLED Engine you insure yourself against damage to your Engine by frost.

INVESTIGATE OUR METHODS.

Our experienced engineers at your service.

Cut out complete advertisement and send to us.

Please send me, without charge, your New Gasoline Engine Catalogue. I may want about H.P. for

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Name Town Province

THE CANADIAN FAIRBANKS CO., Ltd.

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THE RUTH FEEDER

GUARANTEE

The Ruth Feeder is guaranteed to feed any make or size of Separator to its fullest capacity without slugging the cylinder or loosening a spike, and to do better feeding than any feeder manufactured by any other company.

Perfectly Governed with Pickering Governor.

Rapidly Running Feeder Cylinder and Slow Running Retarder Prevents Absolutely any Slugging of Separator.

Will not Loosen a Tooth in a Season's Run.

WE ARE THE MANUFACTURERS OF THE OLD RELIABLE

PARSONS HAWKEYE FEEDER

DO NOT FORGET, it makes no difference what Separator you are figuring on buying, INSIST on having one of our Feeders and then you will be sure of having the BEST.

OUR NEW CATALOG IS READY—WRITE FOR IT, MENTIONING THIS PAPER

PARSONS HAWKEYE MFG. CO., WINNIPEG, Man.

Agents for Alberta: THE CHAPIN CO., CALGARY, Alta.

I can account for it is, that it is almost impossible to get the same class of men as can be got some other places. I have seen five men in Manitoba, keep nine and ten teams loaded all the time. You cannot do it here. There are lots of good men here, A.1. men, but for the one good, honest man you get you will get two slinks of the first water. I have never as yet employed any foreigners, except Englishmen, they are foreign, I suppose, not being born in this country. Some of them were good men, and some of them were not worth two Hurrah's in Hades. They were good mates for some of the Ontario excursionists, who were only common, everyday specimens of God's carelessness.

Some of the readers may take exception to what I say, but nevertheless it is the truth just the same. Only the ones whom the cap fits will pull it on, thereby making themselves conspicuous. If a thresher has good, honest men, he does not need to be making exhibitions of his authority, but with a great number of men, he has got to be a slave driver as they call him, to make any money above wages.

The last two seasons have afforded very poor threshing, and not many threshers have made much money for themselves or the machine Company either. We must hope for a better season in 1909, and if it does happen we must get

out and hustle and get a good price for it as well, 10 per cent. interest on past due paper counts up with alarming rapidity.

Wishing the threshermen and farmers better luck, and your paper every success, I remain,—X.Y.Z.
Radisson.

Fortunes from the Soil

Across the road from the schoolhouse the settlers at Tontitown built a church—the best country church in Arkansas. About it, on their little plots of land, as prosperity came with close tillage, they began to build their houses. For the first two or three years the log cabins had sufficed; but now neat suburban cottages, each with its rose garden, its flower beds, its vines, and on either side and back from its orchards and vineyards, appeared in every man's portion. Strawberries and vegetables paid during the first years of cultivation, so that payments on land were anticipated, and as the settlement grew older apple and peach trees came into bearing and added to the wealth of the community. Then the grape vines, which had been planted each year an acre at a time, began to bear bountifully, and the grapes to be turned into wine, with Italian skill; so that before the colony was six years old there were single acres

producing as much as \$300 a year in cash return.

To a community which thus devotes itself to extensive farming prosperity must come. Tontitown grew steadily richer upon such returns as this. The houses became larger (the home of the original American owner had long since been turned into a storage barn) and beside the church grew up a big boarding-school, which cost the little village \$4,000 in cash, and to which came Italian children from as far away as St. Louis, a testimony to Bandini's earlier educational experience—perhaps the germ of a college to come later.—John L. Mathews, in the January 'Everybody's.'

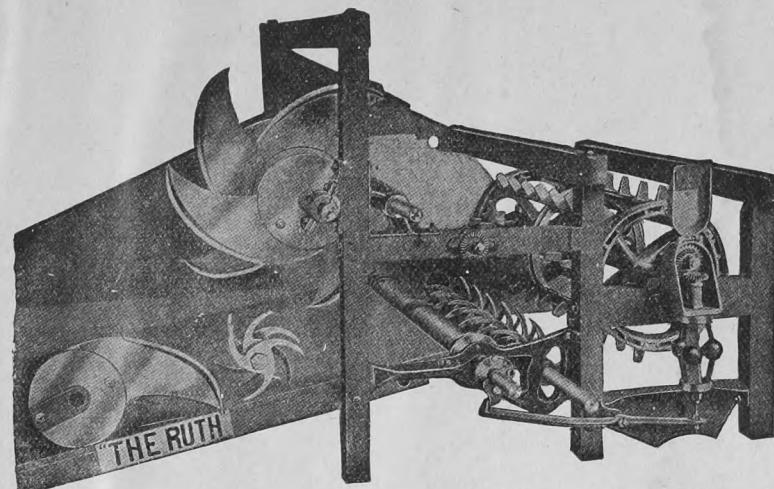
An Old One But Still in the Ring

Under date of Dec. 11, 1908, the Michigan Lubricator Co., of Delvort, Mich., received a Lubricator from Gannon & Carey, of Eno, Pa., also a letter which reads as follows:

"We are expressing you today by American Express Company, one of your Lubricators, which we would ask you to put in first class order and return to us at once. Thanking you for your prompt attention, We are, Yours respectfully,

GANNON & CAREY.

The Lubricator was received, and we found that it was numbered 311, manufactured by us in December,



IMPROVED SEPARATOR'S WORK.

Holland, Manitoba, Jan. 28, 1907.
Parsons Band Cutter and Self Feeder Company,
Newton, Iowa.

Dear Sirs:—I like the Ruth Feeder I bought of you last fall. I am very much pleased with it, indeed, and only wish I had got one long ago. I would have no other feeder on my separator, which has done better work than it did before I used the Ruth.

Yours truly, T. BUDD.

1884, being one of the first Lubricators which we ever manufactured.

It is in good shape and with the exception of replacing a Glass and a new feed stem will be as good as the day it left our factory. The fact that twenty-five years ago we were manufacturing a Lubricator that would stand the wear and tear of an Engine Room, heat and cold is, sufficient evidence of the workmanship and material in Michigan Product.

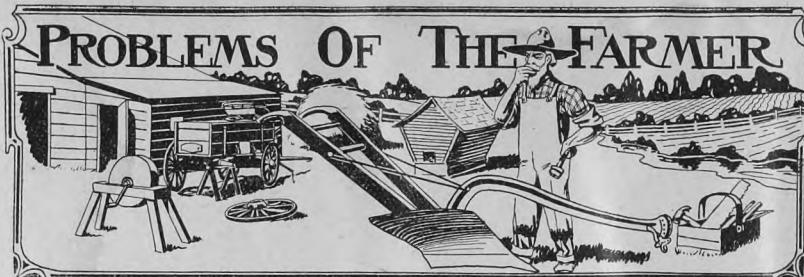
Practical Talks to Threshermen

(Continued from page 26).

A large number of governors are also provided with what is called a safety stop. This is so arranged that if the governor belt breaks, the stop causes the governor valve to fall and shut off steam from the engine. In one make of governor a heavy pulley attached to an arm rests on top of the governor belt. When the belt breaks this arm falls and in doing so engages the valve stem and forces the valve to its seat. Another arrangement disengages the bevel driving gears and allows the whole head of the governor to fall and shut off the steam.

Nearly every Japanese follows the profession of his father.

Fifty vessels are constantly employed in repairing the submarine telegraph cables of the world.



BURDENED with work and in some cases isolated, there is a tendency toward many farmers becoming slack and careless—with a lack of attention to detail. They forget the best with no set standard to work toward.

I recently rode with a farmer, whose team was sleek and fat. I asked him how it came that his horses were in such perfect condition. With considerable modesty he told me that it was through care, but said that it was just as easy to keep a horse fat when once in that condition as it was to keep it poor. He further stated that all farmers might have fat horses at all times if they only would. The same farmer keeps a small herd of cows, and his ideal in handling dairy cows is as high as in handling horses. He is content only with the best results. He is successful.

The farmer has perhaps the broadest of all fields for the realization of high ideals. The plant, animal, and mineral kingdoms are materials in his workshop. How great are these! Home, community, and nation are moulded by his actions; and how great are these! Was prince in former time ever given so great rule as the farmer is to-day? But I am not preaching; these are common everyday facts. Possibilities for telling results are unlimited in all lines of farm work. The setting of high ideals and the directing of all efforts for their realization will continually raise us to higher and higher planes.

Young farmer, establish early a reputation for character, for doing the right thing. Let integrity, courtesy, and cheerfulness be your watchword. Cultivate these until they become a habit and an indestructible part of your being. Then set your aim high in your chosen work. This gives dignity to your occupation. Realize your ideals.

II.

It was Blackstone, himself one of the greatest expounders of the English law from which our common law is derived, who denounced the hair-splitting and the superfine distinctions and shades of meaning by which "the law was frittered into logical distinctions and drawn into metaphysical subtleties." If the great commentator were alive to-day he would have the greater reason for complaint. The plainest statute is susceptible, in the dexterous hands of a brilliant legal quibbler, of many shades of meaning; and therefore trusts, corporations and individuals who find it

profitable to defy the law, retain counsel always at their elbow to advise them how far they dare go without getting into jail. There is plain and unequivocal law enough on our statute books to punish every criminal in the country and to give to every man the justice that is his due; but rogues are at large and the innocent remain unavenged because of the efforts of expert legal jugglers.

Apropos of the above, there comes from our neighbors across the line, the following cry:

"It turns out that while there are enough pure food laws in force to drive every rascal out of business and to insure the consumers ample protection, the one class continues to ply a profitable trade in adulteration, while the other suffers in health and purse. No sooner is a rascally dealer in adulterated foods caught and brought to book than a well-paid lawyer accompanies him to court, where it is speedily demonstrated that the act under which the adulterant is being prosecuted is so loosely drawn that a horse and wagon may be driven through it. Whenever it is proposed to send a farmer to the Legislature or to Congress, objection is at once made that not being learned in the law, he would not know how to so frame bills that they would stand the test of courts, and yet the majority of lawyer-drawn statutes are riddled as full of holes as a sieve the moment the judicial light is turned upon them. So adept have the lawyers become in this legal quibbling, that almost any shrewd attorney is able to prove that the plain commandment, "Thou shalt not steal" does not really mean what it seems to. The great need of our time is for less law and more justice; less sophistry and more common sense."

Canadian law and Canadian justice are more in keeping with each other than in the United States, nevertheless all will bear watching.

III.

There are being held and will continue to be held in the various sections of the West, during the next month or two, many farmers' institutes. It is a problem with many farmers as to just whether or not they will attend. If busy, they will not, if idle, perhaps. They are indifferent about the matter.

The farmers' institute is an institution that has done more for modern agriculture than perhaps any other one thing. It has brought the farmers together for discussion

TO EARN THAT BIG SALARY, LEARN RAILROADING.

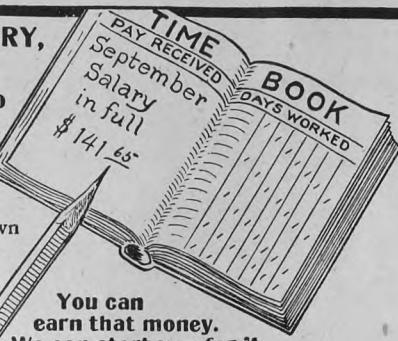
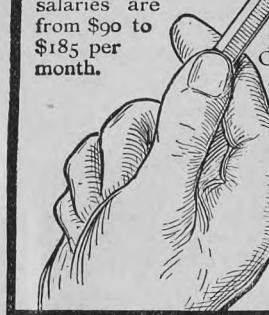
GET OUT YOUR LEAD PENCIL AND DO
A LITTLE FIGURING.

Whatever your present monthly salary may be, multiply it by 12, and find your yearly income. Will it amount to \$1,699.80, the salary shown above? Do you earn one-half that amount? If not, why not?

FIREMEN AND BRAKEMEN

Earn from \$75 to
\$150 per month.

With the rapid progress of railway building in Canada it takes only from two to three years to be advanced to engineer or conductor, whose salaries are from \$90 to \$185 per month.

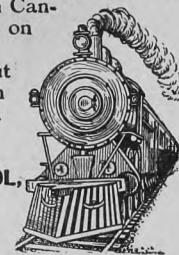


You can
earn that money.
We can start you for it.

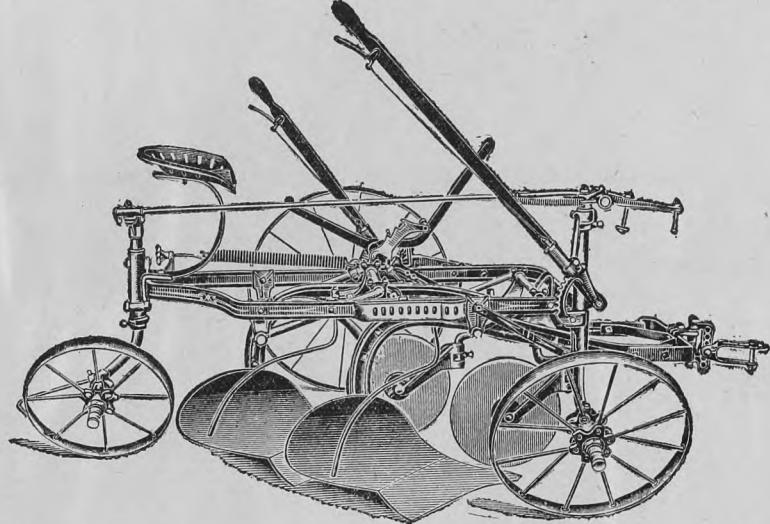
We teach and qualify you by mail in from 8 to 14 weeks without loss of time from your present work. Positions are secured; in fact, there are many openings right now if you were qualified to fill them. Our Course is the most complete treatise on the subject of Railroading in existence. We defy any school to show a course anywhere nearly as thorough. Don't tamper with your education by buying cheap bargain courses. Ours is the only School of its kind in Canada with text-books written for use on Canadian Railways.

Our free booklet tells all about our system of teaching. When writing, state age, weight and height. Address:

THE DOMINION RAILWAY SCHOOL,
Dept. A
Winnipeg, Canada.



New Eclipse Plows



You can point out to your customers a few more points of merit in the construction of the "New Eclipse."

The frame extension that supports the land axle is made of high carbon steel, firmly attached to the frame—land wheel is always in lines, consequently.

Notice the way the bottoms are built. Heavy frog, running well up the beam, strongly braced and bolted. Built to last.

Between the beams, in front, there is a heavy steel brace, giving strength and rigidity.

These points all help the sale. Further, we help you by liberal advertising in the farm papers. Get our 1908 prices.

THE PERFECTION OF ALL RIDING PLOWS

Made by FULLER & JOHNSON MFG. CO., Madison, Wis.

The Stewart-Nelson Mfg. Co.
General Agents WINNIPEG
Limited

**MONEY TO LOAN
on IMPROVED FARM LANDS at
LOWEST RATES**

APPLY TO
NATIONAL TRUST COMPANY, LIMITED
WINNIPEG ————— SASKATOON ————— EDMONTON

TRACTION ENGINEERING

E. H. HEATH CO. LTD.

Conduct in connection with "THE CANADIAN THRESHERMAN AND FARMER"

The Heath School of Traction Engineering

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I think your Course is a very good thing, as it is put in a simple form, so that anyone can understand it, and it is very complete. I have read a great many books about Steam Engineering, and have had a lot of experience, but your Course gave me facts I never heard of, and I began to think I knew very little. The price of your Course is very low, compared with others, and I would advise anyone with a liking for Steam Engineering to study it, as it is the best investment they can make.

Very sincerely yours,
ARTHUR PAYNE.

Very little. The price of your Course is very low, compared with others, and I would advise anyone with a liking for Steam Engineering to study it, as it is the best investment they can make.

Dear Sirs:

Kindly send without cost to me, one of your handsome booklets and full information regarding a Course in The Heath School of Traction Engineering (by correspondence)

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Yours truly, W. F. BROWNBRIDGE.



in a way that they could not be assembled by any other means. It is the farmers' forum for free lance discussion, and as such is a direct means to the best results.

In the early history of the farmers' institute there was a prevalent idea that the men chosen as leaders were theorists, and that the ideas which they advanced when put to a practical test would fall short of the mark. That idea is still held by some, but it is fast losing its support, and the farmers as a whole, are beginning to realize that even though the speaker may be somewhat lofty in his views, he nevertheless furnishes food for thought, and that too much thinking cannot be done in modern agriculture.

It is the duty of every farmer to support the farmers' institute both with cash and with his attendance. If it were called The Farmers' Institution instead of Institute, it would probably be more apt. Suffice it to say that it is or can be made the farmer's best friend.

IV.

The cream separator business has been infested with the mail order parasite to a greater extent than probably any other branch of the farm machinery industry. Just why this should be it is hard to say, unless it is due to the fact that it is an all-year-round tool, and that its cost is not too high to keep it out of the ranks of the mail order buyer. It is also a machine that per-

mits of a wide variation in quality, and consequently in price. Some mail order machines have been put upon the market at as low a price as \$20.00, and when this is compared with the prices of standard goods there is undoubtedly a very good sales argument to bring before the farmer. All sorts of attractive propositions have been made him as regards terms of payment, such as "free trials," small installment payments," "send it back if not satisfied," etc., etc.

The latest thing in this respect, is an offer made by a Chicago concern, that offers to take cream in payment. It is certainly catchy and will doubtless be the result of many mail order machines being distributed among the farmers, but when we get down to the real facts in the matter it is the same old story. Quality is sacrificed for price, and the man who buys such a machine or any cheap mail order proposition must not for a minute suppose that he is getting \$1.00 value for 50 cents. Don't you ever believe that the men who make such offers, are in business for anything but gain, and if they can afford to make a cheap offer with a long term of payment you can rest assured that quality of goods has been sacrificed. The price they ask may be wrapped up in the value of the goods, but that value is not sufficient for the farmer to be satisfied with. It takes time, money and skill to put value into a farm, like-

wise a farm tool, and if you are offered something in either line cheap, there is a good and sufficient reason for its being so—and that reason is generally lack of quality.

Experience has demonstrated that the farm machinery that is sold through a good reliable dealer is the best for the farmer to buy, as only the most reliable goods that do not have to go begging for buyers are sold in this way.

V.

There is a problem current with nearly every farmer and which few solve, viz.: keeping a record of farm accounts. "But," you say, "my business is not large enough to warrant the time expended necessary to keep a record of my farm operations." This is just where a great many farmers make a serious mistake. Farm expenditures and farm receipts are largely guess work, and while the farmer may be making some money he never knows from just what source or just exactly how much he has made.

The farmer is a busy man and has little time for the keeping of accounts, but it is this being busy that makes it all the more necessary that some record of receipts and expenditures should be made.

There is probably no better way to do this than by means of a diary. Books for this purpose can be obtained at almost any stationery or drug store, and if the farmer will every day jot down in its proper

place, the principal things in that day's work, the weather conditions, crops planted or harvested, etc., etc., would it not be a pleasant task at this season of the year, to pick up your 1908 record and go over it? Furthermore, would it not aid you greatly in your plans for 1909? Try it for another year, and I am confident that you will be more than pleased with the results.

Using Waste Straw.

This is a matter that up to now has been given but very little thought, but which can be put to one of the best uses of anything on the farm.

Take in the fall as soon as threshing is over and draw straw onto any "and all" alkaline spots on the farm, for there are very few farms without them; spread the straw about three feet deep and do not be afraid to spread it from centre to circumference, be thorough and you will be well paid when it is well-covered, set fire to it and you will notice the difference in yield next year.

This plan carried out will in two or three years exterminate most of your horrible alkaline patches unless they be of a very bad nature.

Farmers will soon have a good market for their straw, in the Brandon district, as it is intended to use it largely for making gas in that city.

F. BAILEY.

Bradwardine, Man.

THE western end of the Canadian Pacific Railway was constructed during the years 1880, 1881 and 1882. From Kamloops to Vancouver, 250 miles, the road was constructed by D. O. Mills and Andrew Underdunk as contractors. The Canadian Pacific was one of the most difficult and most expensive roads ever constructed in any country. Out of the 250 miles from Kamloops to Vancouver not over 50 miles was earthwork, the balance being rock. Some 25 tunnels of from half-mile to one and one-half miles were bored through the mountains; thousands of tons of black and giant powder, and nitro-glycerine were used in blasting in the construction. March 15, 1880, I left San Francisco, Cal., for British Columbia, with 250 men to be employed on the Mills & Underdunk contract. These men had been employed under my direction in building the sea-wall around San Francisco bay. They were composed of different kinds of laborers suitable for all kinds of railroad work. From San Francisco to Victoria, B. C., we went by steamer "Idaho," from Victoria to Yale, 175 miles, by boats up the Frazer river, Yale being headquarters of the Mills & Underdunk contract. On arrival at Yale, I was placed in charge of transportation of all the material over the line. Seven thousand white men and five thousand Chinamen were employed on the contract. The material and plant were conveyed over the line by pack trains and wagon trains. The wagon trains consisted of some 25 jerk-teams with six or eight pair of horses or mules, with three or four trail wagons, 15 string teams with eight or ten horses or mules, and eight or ten four or six-horse teams. These teams transported the material over the regular stage road on the east side of the Frazier river, while the material along the immediate line of the road was conveyed over the mountain by pack trains, each train consisting of 50 packs or 50 animals. The animals used were the Spanish Mexican mules. For endurance they are superior to all others. These mules are small, but can stand a great amount of abuse and starvation, and will suffer but little from the effects of a hard drive. A mule is surer-footed over the mountains than horses, and they are more intelligent in the packing business than horses. Each train of 50 packs has a "madrina," or bell mare. Usually a gray or white animal is used, a steady mare with a bell round her neck, and wherever she goes the whole pack of mules will follow. When the train comes in from a trip, the mules are turned into a corral, their rigging is removed and placed in a line. When the train is to receive its cargo for another trip, the boss of the train brings up the bell mare and tinkles the bell. Although there may be 200 or 300 mules in the corral, each

Siwash Indians as Packers on the C.P. =Railway During Its Construction=

By GEORGE P. FLOYD.

mule knows its own bell and will separate itself from the rest, and take its place before its own rigging, and remain there until the rigging is placed on it. Each mule knows its own rigging by the smell. A band of mules will always follow the bell mare and never go ahead of her. Place the bell on a mule and the whole band of mules will stick up their ears and scamper off "helter-skelter." They seem to consider a mule unworthy of their notice as a leader. It is nearly impossible to lose an old mule from the train, for if detained several hours by force, the mule by power of smell, like a dog, will track out her companions, or rather the "madrina," for she is the chief object of affection.

It takes an expert to manage and run a pack train. The skill is in loading and placing the cargo on the pack saddle equally, and lashing it so that the cargo will not shift or become loose. An average load for each mule was about 250 pounds, but in some parts of the route the trail was so precipitous that 150 pounds was all the animal was able to carry. The rigging of a pack train consists of the "aparejo"—pack-saddle, which is composed entirely of rawhide, a strong leather sack about two feet wide by 60 inches long, used as a pad to protect the mule's back while packing. A seam running from front to the rear of the aparejo divides it into two parts. The sides are stuffed with hay or moss. A careful packer will keep the stuffing evenly distributed, as portions of it are constantly shifting and working into lumps which chafe the mule's sides. Serious trouble is often experienced on long and toilsome trips by the aparejo causing a sore back. Over the woolen blankets is placed the saddle-cloth—"corona"—which is made of woolen cloth worked with ornamental borders, with the number of the mule to which it belongs. The tendency of the aparejo to work forward is overcome by a wide crupper, with straps passing back from the hips. The cargo is confined to the aparejo by a lash rope 35 feet long, made of rawhide, with one end spliced to a chinch ring. A sling rope about 28 feet long, made of hand-made manila is used to bind the cargo, fore and aft. The pack cover or "manta," five feet square, is made of waterproof canvas. A leather blind or "tapato," is always used over the mule's eyes while packing the cargo. When not in use on the head or eyes, the tapato is used as a whip. A halter, or "hackamore," is always on the mule's head, made of leather straps. To manage a

pack train of 50 packs it takes a boss and three whippers-up. The boss rides the bell mare, while the whippers-up take the foot-train or "shanks mare." Their duty is to keep the train together and see that the cargoes do not get loose or shift.

The packers employed on the pack trains, when I first took charge of them, were all old, experienced men in the business. They had been engaged in the Cariboo mines on the Frazier river as packers, for years. Generally speaking, they were rather queer packages of human nature. Many of them, whimsical and freakish, with odd ideas. A tough set of "hair pins" to manage, much addicted to drinking and gambling.

For some time the packers attended to their duties satisfactorily, but after awhile they became slack and shiftless. So much so that it was unbearable. They were impressed with the idea that they had a cinch on the work, and that their duties could not be performed by any others than themselves, which to a certain extent was true.

At that time that part of British Columbia was inhabited by the Siwash and Hider tribe of Indians. Speaking the Chinook jargon, they used a great deal of sign language, which I easily learned. I became acquainted with a buck, Deerfoot, who took a great liking to me, taking great pains in teaching me the Chinook language as well as the signs. I made it a point from the first to get into the good graces of the Indians, giving the bucks tobacco and the women trinkets and molasses. This is always customary if you wish to stand in with the tribe. And it must always be given off-hand and with generous impulse. Indians are very close observers. The domestic habits of the Indians were very commendable and could be followed to advantage by many white families. They were hospitable to those they respected, and the reverse to those for whom they had contempt. In a small way the Indians understood packing. I conceived the idea that I could utilize the Indians as packers, to take the place of the white packers who had become so demoralized that they were almost worthless. Yet it was a difficult matter to accomplish, and must be done in a clandestine manner, or I would find myself hors-de-combat. I selected Deerfoot and three other intelligent bucks. After consulting with them, I was confident that I could, with proper management, change the white packers for Indians. The idea was laughed at by the managers. Yet I insisted that it could

be successfully accomplished. I concluded to make the effort. I instructed the four Indians that I had selected to gather together as many Indians as would fill the places of all the white packers, and have them assemble at one of their settlements, when the number was complete.

In about a week they reported that they had selected 60 of the Siwash and Hider Indians who they were satisfied would fill the bill. After inspecting the band, I decided to make the trial with them. I agreed to pay them the same wages that I was paying the white packers, furnish them everything but money, their wages to be paid them every three months, "three crews at a time." It is a well-known fact that an Indian cannot keep money. When he receives it, it is almost a sure thing that he will invest in fire-water, and continue the game until his pockets are empty of coin, during which time the Indian is a worthless piece of humanity.

In that country it is unlawful to sell or give an Indian whisky, yet they would in some way manage to obtain the stuff. I have seen an Indian give a good pony and saddle and bridle for a bottle of poor whisky.

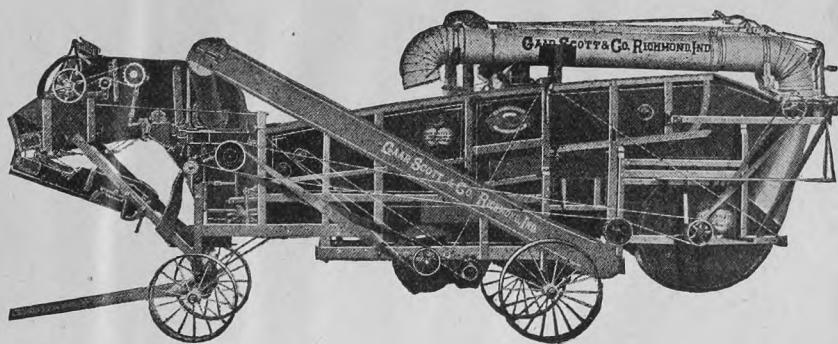
The change of the Indians to packers must be made without any warning to the white packers. I decided to make the change Sunday night. I made arrangements to have all the pack trains in the corral Sunday. The 60 Indians were assembled near my headquarters, ready to take the pack trains out in the night. It so happened that some of the white packers were away that night on one of their sprees. At 1 o'clock in the morning the Indians came in and were assigned their trains, with a boss for each train. I had the cargoes for each train ready to load. By 3:30 in the morning all the 20 pack trains had received their cargoes and had started on their trip over the trail. As I expected, trouble from the white packers, I had taken the precaution to send three reliable men, well armed, with each train to protect the Indians on the trip. In the morning when the white packers made their appearance, they found the corral empty. When they found that the pack trains had been placed in charge of Indians to fill their places they were furious and swore vengeance on me as the instigator of their downfall. I had taken the precaution to have a party of well-armed men around my headquarters, in case of emergency, and also had a paymaster's clerk there ready to pay the packers their money due them. We had a desperate gang to deal with. I soon ascertained that the packers had formulated a plan to capture some of the pack trains and take vengeance on the Indians. Anticipating their move-

(Continued on page 59.)

A NEW YEAR TOAST TO THE THRESHER HOST

AROUND THE
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Gaar-Scott Tiger Thresher, 1909 Model
With Gearless Stacker



Here's to You
and the old
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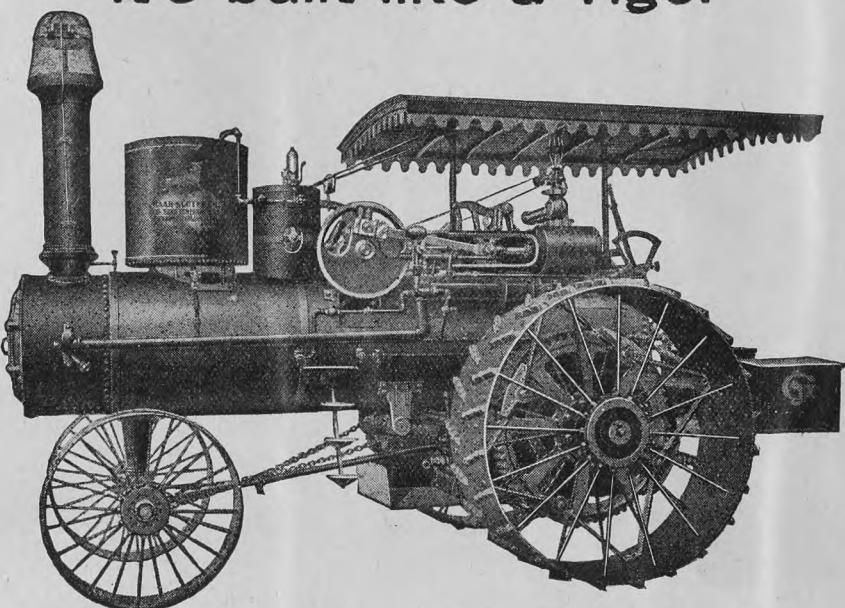
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"It's built like a Tiger"



GAAR-SCOTT UNIVERSAL ENGINE
Special traction gearing and steel drivers

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FOB CHRISTMAS OFFER
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DON'T WAIT IF
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PIN YOUR FAITH
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7. DO YOU want a Separator that will last for years?
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THEN—

YOU are sure to be interested in an AMERICAN-ABELL Threshing Outfit.

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SEND FOR OUR ILLUSTRATED CATALOGUE—FREE FOR THE ASKING.

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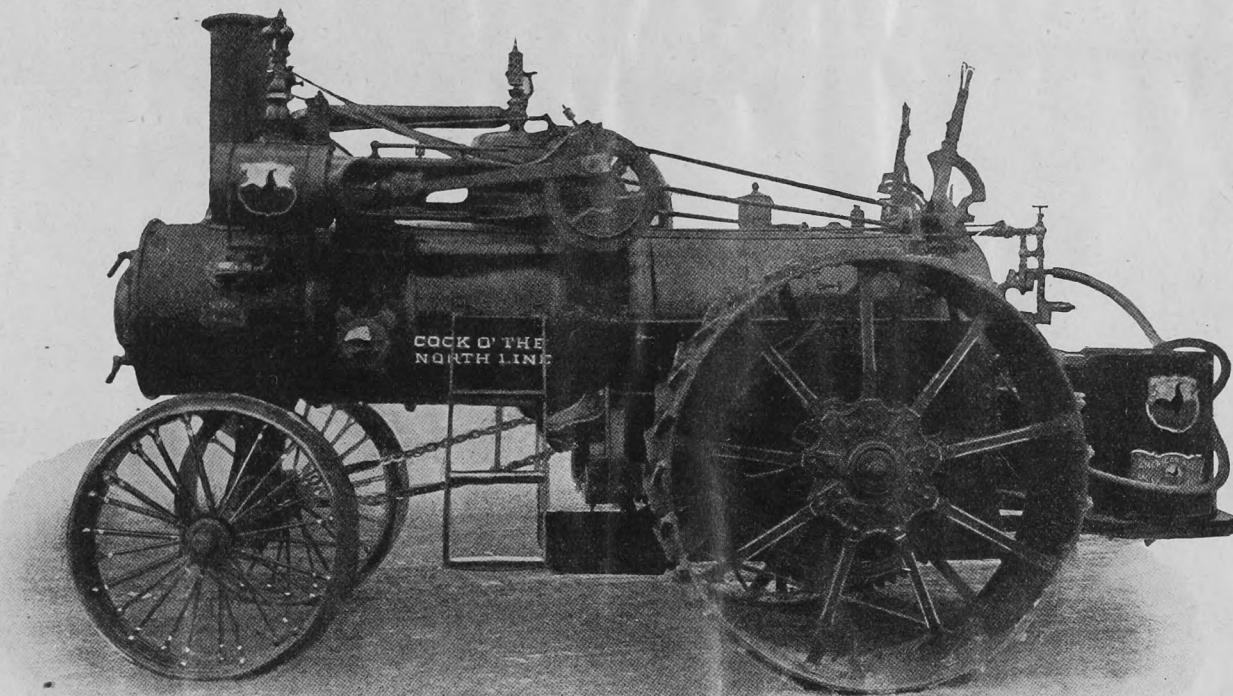
NO THRESHERMAN

Ever owned a better Threshing Outfit than that made up of the Engine and Separator illustrated on this page. They are designed to handle their respective ends of the belt in a way that is at once a satisfaction and a money-making proposition for the Thresherman.



American-Abell Separator, Complete with Band Cutter, Self Feeder and Wind Stacker.

THE AMERICAN-ABELL SEPARATOR is a "grain saver" and a straw handler. It is a Machine that can tell its own story through its hundreds of satisfied owners and users. It has separating features that are all its own—features that are controlled by patents of our holding. It is built to Thresh and to Wear.



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THE AMERICAN-ABELL TRACTION ENGINE is modelled upon the most approved lines for Strength, Durability, and Simplicity. All the parts needed in a Traction Engine and no more. Built for Service, built for Power, built for Tractability, it is the Thresherman's favorite wherever tried.

d Thresher Company, Limited



Care and Management of the Steam Engine.

BY T. J. STRACHAN.

THERE are various kinds of power producing machinery in existence at the present, from which the farmer may select, and the steam engine is undoubtedly the most important and thus requires a great deal of care and attention. In the following notes, I shall endeavor to take the various parts of an engine in order of importance and for this reason I start with the boiler. The function of a boiler is to heat the water sufficiently to change it into steam, for use of the engine. The boiler should be repaired, and properly fitted for work, at least a month before it is required for constant use; and during this time it should be fired up and set to work to see if everything is in first-class order. During the working period the pressure should be kept as steady as possible. If allowed to vary it is hard on the boiler. Here is where a good fireman plays an important part in aiding the engineer. No rule can be given as to the frequency with which a boiler should be washed out. In some localities it is necessary to clean it twice a week, while in others once a week is sufficient. In emptying the boiler, preparatory to cleaning, be sure that all of the fire is out, and the steam pressure below five pounds. This is necessary in order to prevent the mud from becoming baked on the tubes and sheets. To clean the boiler remove the plugs or hand holes in the water legs, and also the one at the bottom of the tube sheet. Wash the boiler thoroughly with a hose, using as much pressure as possible, and always be careful to scrape all the lime off the top of the fusible plug. A good and cheap remedy to apply when refilling the boiler, is a bushel of wheat. This not only prevents scale forming, but aids in leaky flues.

In laying the engine by after the fall's use, a gallon of oil should be put in along with the water, and the engine moved around or started to throw the oil up against all parts inside of the boiler—this will prevent rusting.

We will now pass on to the firing which is a very important feature in the case of the boiler. When firing with straw, keep the chute full all the time, so that no cold air can get in on top of the fire to the tubes. Take small forkfuls and let each forkful push the preceding one into the fire. Occasionally turn the fork over and run it along the grates to shove the clinkers down, and allow a draught below the fire. The flame coming over the brick arch as seen through

the peep hole should appear white hot, and continuous. If firing too heavy, or if too much be put in at a time, the flame will be dark and smoky. With any kind of fuel the ash pan must not be allowed to fill up or warped for melted grates are sure to be the result.

The fittings necessary for the operation of a boiler are: Feeder, for supplying water; Steam gauge and safety valve. The state of the feed water demands the constant watchfulness of the engineer or fireman. It is his first and most important duty to know that there is sufficient water in the boiler at all times. If he relaxes his attention in this respect, disastrous results are likely to follow. The feeders which are injectors or pumps, should receive close attention, and each be in a condition to work at a moment's notice. It is essential to use the cleanest water obtainable, as dirty water always causes trouble. If you find that the water has been allowed to get below the glass and lower try cock, leaving the crown sheet bare, the thing to do is to get the front end of the engine higher than the hind end, and be quick about it too.

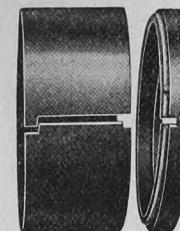
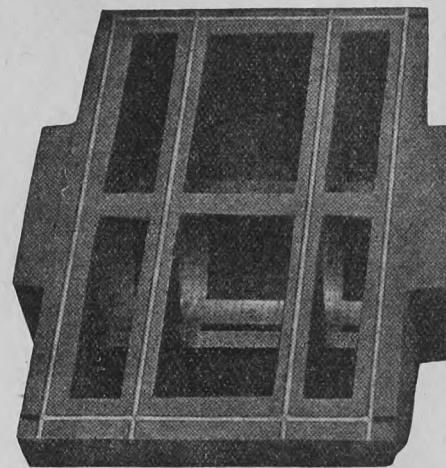
The steam gauge indicates the steam pressure in the boiler in pounds per square inch. In this gauge there is a curved tube or spring, and when exposed to pressure from the inside tends to straighten, as a hose will do when under water pressure. One end of this tube is connected to the pointer by means of a segment lever and pinion, so that the pointer, which is on the same shaft as the pinion, revolves, indicating on the dial the pressure on the boiler. In order to prevent the temperature of the tube from being injured by hot steam, a siphon, which condenses the steam and keeps the tube filled with water is placed between the gauge and the boiler. The gauge should be tested on another boiler before starting out in the fall to see if it is true.

The safety valve is a little valve mostly placed on the dome, for the allowance of excessive steam to escape, and closes when the pressure has been reduced a few pounds. If a change of pressure be desired, unscrew the jam-nut at the top, and apply the key to the pressure screw; for more pressure screw it down, and for less unscrew. To regulate the opening and closing of the valve take the pointed end of a file and apply it to the teeth of the regulator. If the valve closes with too much loss of boiler pressure, move the regulator to the right.

BAKER PISTON VALVES

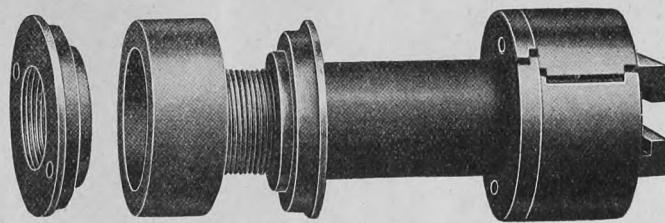
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insure a saving of 25
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They will do this
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WITH this valve is introduced for the first time a spring packing ring that will take up every bit of wear and yet work satisfactorily under all conditions. Our catalogue describes and illustrates fully, and we will send it to any interested thresherman for the asking.

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FULL GOVERNMENT DEPOSIT.

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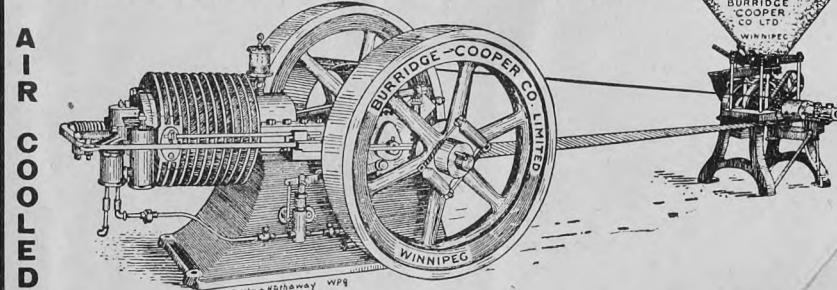
THE WAWANESA MUTUAL INSURANCE COMPANY

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Amount of Insurance in force Dec. 31st, 1907 : \$20,355,303.00
Assets over Liabilities : 269,273,10THE NUMBER OF FARMERS INSURED DECEMBER 31ST, 1907, 16,316
Over 16,316 Farmers Insured. The largest agricultural Fire Insurance Company west of Lake Superior. Agents wanted in unrepresented districts.

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Burridge Cooper Co. Air Cooled Engines. No water to freeze. No bursting of cylinders. No oil to leak. No water tank and no complicated fans with our air cooling patent device. We keep the cylinder as cool as can be kept by water or oil. Every engine fully guaranteed. If interested write for catalogue and price list.

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A boiler is usually fitted also with a whistle for signaling, and a blower for forcing the draught. Both of these should be kept in good working order, especially the first, in case of fire or where quick assistance is required.

I will now pass on to the engine. The term engine commonly includes the engine and boiler. The term engine proper will be used to designate those parts which are actually concerned in converting the energy of steam into rotary motion. The engine proper consumes steam, and delivers motion.

The cylinder is where the actual change of heat into motion takes place. The admission of steam to the cylinder is controlled by the slide valve which slides upon a planed surface, called the valve seat in the steam chest. Which is adjacent to the cylinder. The steam is carried from the boiler to the steam chest by means of the steam pipe, on which the governors and throttle are located. The cylinder is one of the most important parts of an engine, and great care has to be taken that it gets plenty of oil. Use a good quality of cylinder or valve oil in the lubricator or the oil pump, as it is very important that the piston and valve should be well lubricated with an oil that will stand the high temperatures of the steam.

The throttle controls the steam from the boiler to the steam-chest. Great care should be taken that your throttle is not leaking. When this is the case there is often serious trouble. It should be kept open after the engine is started, and the control of the speed left to the governors. The only exception to this rule is when your engine is working hard and has a tendency to prime. In this case the engine should be made run very slowly by means of the throttle.

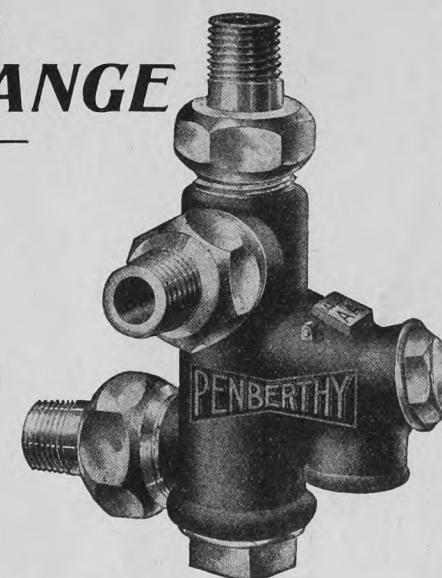
The governors regulate the speed of the engine, by limiting the amount of steam admitted to the cylinder. To increase the speed of the engine, loosen the check nut at the top of the governors, and turn the screw up; to decrease the speed, screw it down. For packing the boxes candle wick is excellent, soaked in a mixture of tallow and black lead or graphite. Oil the governors thoroughly with good oil. If oil has been used which causes the parts to gum or stick, a little benzine or kerosene poured into the holes will keep the parts clean and in good order.

There are several other parts, as the eccentric, crosshead, and gears which are all important, but are all understood by the average engineer. Some engineers are always loosening a nut here, tightening up a loose nut there, adjusting this, altering that. When an engine is alright, they keep at it till it is all wrong. As a result they are in trouble most of the time. When an engine is running



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Now-a-days it's easy to be deceived by the far-fetched claims of some manufacturers.

The most expensive way for you to find it out is to buy their wares and try them.

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MANUFACTURED BY
Penberthy Injector Co., Ltd., Windsor, Ont.

alright 'LET IT ALONE.' Don't think you are not earning your salary because you are merely sitting still and looking on? If you must be at work, keep at it with an oily rag, cleaning and polishing up; that is the way to find out if anything is really the matter. On the other hand, an engineer who does not keep his engine clean and bright, by constantly passing his hand over it with an oily rag, is certain to over-look something, which perhaps in the end, will cost the owner a good many dollars to put right.

McLaughlin Carriage Co. Doing Things.

The automobile branch of the McLaughlin Carriage Co.'s business, which was established in the fall of 1906, has gone ahead in such a manner that it has been found necessary to enlarge the factory at Oshawa. An entirely new building is now nearing completion and will be devoted solely to the manufacture of the McLaughlin-Buick cars.

During the 1908 season, over eighty cars were sold by the Winnipeg branch at points West, and this amount of business, which was done during the first year of the company's incursion into the automobile industry, will be more than trebled during the present season. W. C. Power, one of the company's automobile staff in Winnipeg, has recently returned to the city from a trip through the West as far as the Coast, and during this trip

arranged agencies for the McLaughlin-Buick cars in Vancouver, Victoria and Vernon, B. C., Medicine Hat, Lethbridge, Calgary, Saskatoon, Edmonton, Balcarres, Estherville, Moosomin, Regina, Brandon and Portage la Prairie.

A. C. Emmett, another member of the travelling staff, has also reported to headquarters, advising the closing out of numerous contracts for 1909 models, in the outside districts of Manitoba.

The model 10, light roadster, which was so popular in Winnipeg, last season, has been made even more attractive for 1909. The wheelbase of the car has been lengthened so as to improve the easy riding of the car over the rough roads, and battery troubles have been obviated by the fitting of a high-class magneto, and there will undoubtedly be a great demand for this excellent little roadster when the new models are seen in Winnipeg.

The new type of automobile buggy which the company have placed on the market for the season of 1909, is attracting general attention from the farmers in the North-West, who have been looking for a really good automobile at a reasonable figure. This machine has been produced after experiments extending over a considerable period, and is in no way a freak, but is in all respects a thoroughly up-to-date automobile, the only difference being the buggy type of wheels fitted in order to make it possible to use the car over practically any class of road. In the higher priced touring cars, the company are offering some of

the finest specimens of automobiles ever seen in Canada, their new model 50 Horse Power, seven-seated car, which sells at Winnipeg, for \$3,100, being the equal of many American-built cars at \$4,000 and upwards.

The company will build a large garage in Winnipeg early next spring, for the purpose of taking care of their customer's cars, thereby ensuring for them the best attention at the hands of skilled workmen from the head factory.

Manitoba Winter Fair and Fat Stock Show.

Reports are to hand from the Secretary's office, which would indicate that the interest in the forthcoming Manitoba Winter Fair and Fat Stock Show has reached a point which is exceedingly encouraging to the management of the Fair. There is every indication that the splendid buildings at Brandon, will be crowded to its utmost limit, judging from the number of inquiries which are reaching the Secretary with regard to the premium list. The premium list will be ready for distribution by New Year.

AUNT ANNE, an old family darky, was sitting with knees crossed in the kitchen, when the young daughter of the house entered and, impressed with the hugeness of the old woman's feet, asked what size shoe she wore.

"Well, honey," replied Aunt Anne, "I kin wear eights; I ginerally wear nines; but dese yer I'se got on am twelves, an de good Lawd knows dey hu'ts me!"



The Thresherman's Question Drawer

Answers to Correspondents

M. J., Q. Why are the **RATHWELL**, flues so much more **MAN**. apt to leak in the fire box end than at the smoke box? I notice that my flues are almost tight when I am pulling a load, but after I shut the engine down the water runs out of them at a great rate. What makes it do this? Someone has been telling me that the flue sheets are not thick enough to hold the tubes, but I find that it is one-half inch thick in the fire box and three-eighths inch thick at the smoke box end. Would a thicker flue sheet in the fire box keep the flues tight? Which is the best way to make them tight, by rolling or calking?

A. The flues or tubes are more apt to leak in the fire box on account of the great heat. The water not being able to carry off the heat fast enough therefore the surface next to the fire box becomes overheated and too much expansion takes place, and the continual expansion and contraction works them loose. The reason the tubes are tight while running the engine and then leak after the engine is shut down is, that while the engine is running the fire is made hotter and the tubes become tight in the holes, by expansion, and after the engine is shut down the exhaust steam has ceased exciting the draft, therefore the tubes will cool off and contract, and in consequence become loose. The tightening process from the heat will not last long. In a short time the tubes will become loose so that they cannot tighten when the extra heat comes on. There is another reason why the leak is not noticed while engine is pulling, and that is the hot fire dries up part of the leak and carries it through the tubes with the heated gases. A thicker tube sheet in the fire box would make the matter worse instead of better. The thicker the sheet is the farther the water is to carry off the heat, and the more overheated the surface next to the fire box will become. Instead of making it thicker, the writer thinks that if it were thinner it would do better.

When the tubes become loose they should be rolled or expanded. Calking or beading will do little good when they are loose.

F. B., Q. How shall I set the **PENSE**, eccentrics on an engine, **SASK.** center crank, link reverse, and each eccentric independent of the other.

The engine I am running has a link motion. One of the eccentrics slipped on the shaft. Is there any rule for setting them?

A. The first thing to do is to divide the valve. Throw the reverse lever to the extreme end of

the quadrant. Now turn the eccentric (which is connected to the end of the link which is in line with the valve rod) to the end of the link (which is in line with the valve rod) to one end of its travel. Note the port opening, then turn the eccentric to the other extreme and note the port opening at that end. Now move the valve so that the port opening will be the same on both ends. Then place the reverse lever at the other end of the quadrant and see if the port opening is the same on both ends. If it is not, the adjustment should be made on the eccentric rod. After this the engine is put on dead center and the eccentric moved in the direction indicated by the reverse lever till the valve opens the port at the end in which the piston is located. Now place the reverse lever to the other end of the quadrant and turn the other eccentric in the direction the reverse lever calls for till the valve opens the proper amount for the lead on the end of the cylinder where the piston is located. The eccentrics are now set. The engine may be turned to the other center to see that the proper lead is on that end also, and in case of any discrepancy in the work it can be corrected by going over the form again.

To simply set a slipped eccentric, put the reverse lever at the end that will bring the eccentric rod in line with the valve rod, put the engine on dead center and proceed to turn the eccentric the direction indicated at the end of the cylinder at which the piston is located. Turn the engine over and watch the port opening, running forward and backward to see that you have not made any mistake.

R. Y., Q. What is the **GLADSTONE**, cause of my engine **MAN**. exhausting heavily on one side and the valve stem throwing into the steam chest quickly and then pulling out slowly, and doing the same thing reversed? The eccentrics are keyed to the main shaft and the cams are properly divided so as to divide the travel of the valve evenly, but it does it by drawing the stem slowly and pushing it back quickly. What is the cause and what is the remedy? When I put my single cam on I get an even exhaust and the stem of the valve travels evenly, but when I put the link on it throws it all off.

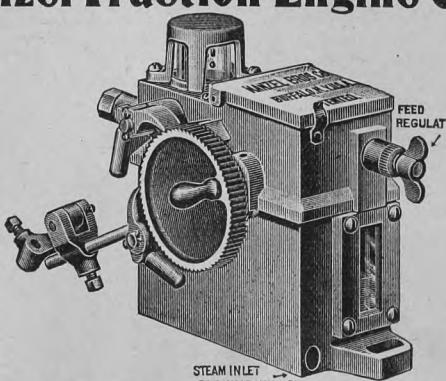
A. If your eccentrics are keyed to the shaft you should not have any trouble in getting the balance of the gear properly adjusted. Throw the reverse lever to the end of the quadrant for the forward motion. See that the reach rod is of proper length so that the linked block goes to the end of the link,

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The Manzel Traction Engine Oil Pump

You don't **THINK**
your Engine is
getting oil—

You **KNOW** it
if you use a
MANZEL PUMP

Feed visible from
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work as well in
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Nothing to freeze.
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sight glass.

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the word "Lion" with
good thresher belts
and they are at home
to all that want the
best.

Every new purchaser of a
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means a new friend for us. To pass "Lion" by would

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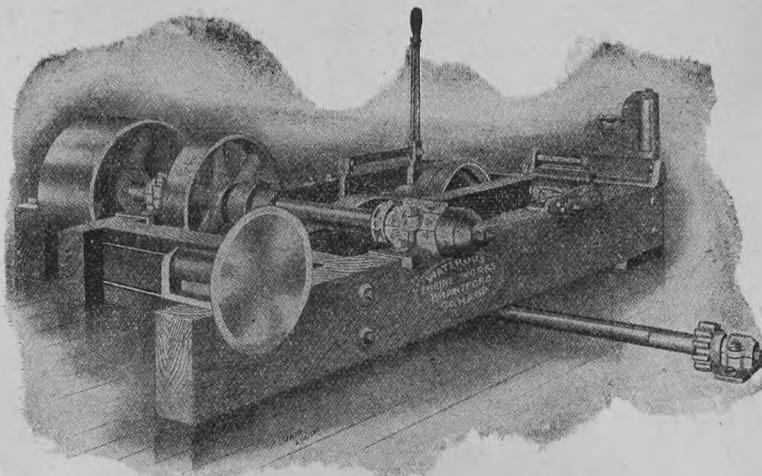
41 Princess St. WINNIPEG, Man.

Waterous Engine Works Co.

Ltd.

Winnipeg

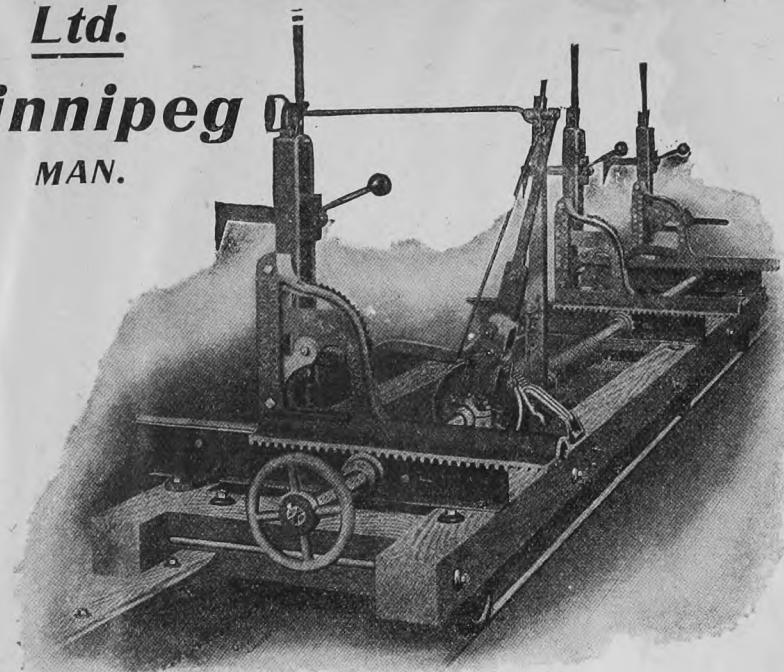
MAN.



Waterous Standard Portable Saw Mill

CONSISTING OF

- ONE No. O Saw Frame
- ONE No. 1A Log Carriage, 30 in. Opening Peel Dogs, Spring Receder, Ratchet Set Works, V and Flat Track
- ONE Tightner Pulley and Frame
- ONE Endless Rubber Belt, 50 ft. 8 in., 4-ply
- ONE 46 in. Solid Circular Saw
- HOE & CO. Chisel Tooth Saw and Wider Drive Belt can be supplied



then adjust the valve so that you have the same amount of lead at each end. Now reverse the engine, throwing the reverse lever to the end of the quadrant and see that you have again the same amount of lead at each end of the valve. The valve should not be moved on the stem in setting for the second motion, but all adjustments should be done by the eccentric rod.

C. L., Q. 1. My engine **VERIGIN**, seems to have plenty **SASK.** of power, but the steam goes down in a couple of hours after steady work. The boiler is supplied by two injectors, three-fourths inch pipe connections, with no pony pump. Would it be of any advantage to reduce the pipe connections to one-half inch? The safety valve is set to pop off at 95 lbs.

2. I am running a 30 h.p. stationary engine with a 40 h.p. internally fired boiler, to pump water for irrigation purposes. My object is this. I would like to use the steam from the exhaust pipe to warm the water before I feed it to the boiler and, by doing so, save fuel. The water is good, coming from an artesian well. I pump it

from a hole made in the ground outside of the buildings about six feet on the right of the engine. The exhaust pipe is on the left of the engine. I feed with an injector or a small double-acting pumping with brass valves. So I would like to get your advice on the following:

Can I let the exhaust pipe discharge the steam in the water?

A. 1. An injector will not handle very hot water, or water over 100 degrees Fahrenheit, especially if it has to lift it a few feet, and after the water gets very hot a pump will not lift it. The chances are you will have trouble all around by heating the water. Your best plan will be to get an exhaust feed water heater. The principle of such a heater is usually to force the cold water through the heater and ready to go into the boiler, it will be much hotter than it would be if it were heated before it was pumped. However, there are heaters that heat the water by exhaust steam before it is pumped into the boiler, but this heater must always be higher than the pump or it will not lift hot water very well.

A. 2. It would not be any help to you to reduce the injector connections to one-half inch. If the

three-fourths inch injector delivers the water too fast, you can reduce the capacity of it by partly closing the suction valve. The injector can be throttled so that it can be working continuously. To reduce it to its minimum delivery, turn on the suction and steam valves full, and after it is at work shut off the suction valve until the injector "breaks," or runs at the overflow; then give it a little more water at the suction valve so that it will again deliver the water to the boiler. After the engine is running and you see that the water is getting low in the boiler, open the suction valve a little more and after working with it a short time you will be able to set the injector at the start, so that it will keep up the water without starting and stopping it so often.

H. V., Q. 1. How would **MILESTONE**, you test an engine **SASK.** with cold water?

2. Will an injector work with anything attached to the steam pipe?

A. 1. If you have a crosshead pump on the engine you can fill the boiler to the top and then pump

the pressure up by turning the flywheel by hand. A force pump of course, is the best. It is customary to pump the water up to twice the working pressure.

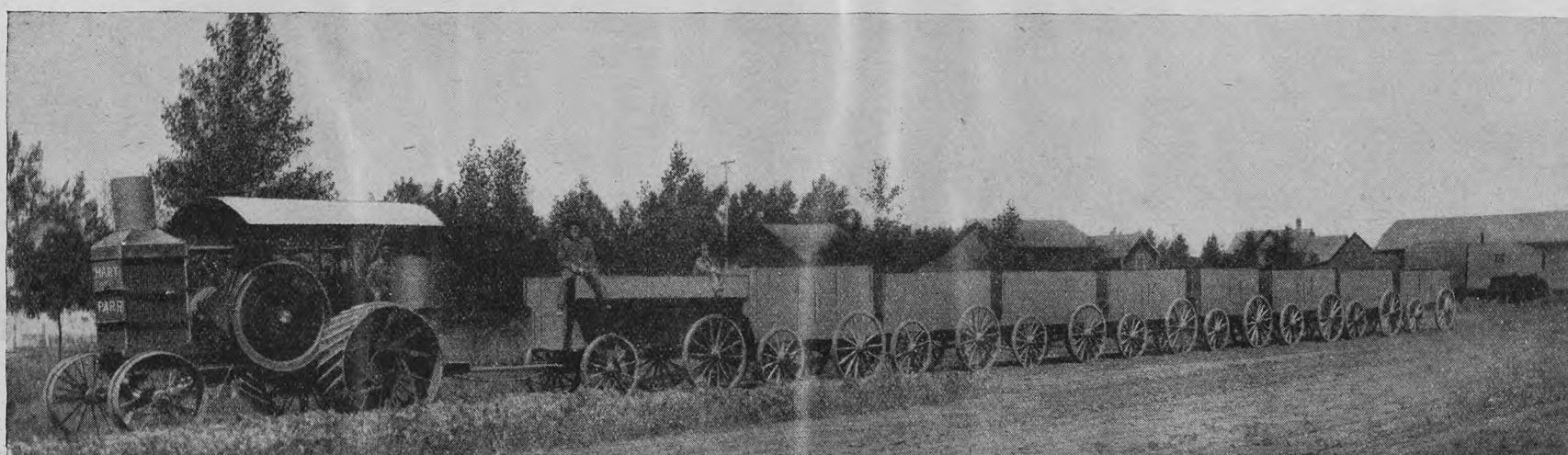
2. An injector should never be connected to a pipe in which the steam is used for another purpose, neither should steam be taken out of an injector pipe for any other purpose, as the full pressure is required to make it work well.

W. F., Q. 1. Can an injector be run or **SHOAL LAKE**, **MAN.** made to work against boiler pressure with compressed air?

2. How is a railroad boiler filled with water out on the road?

A. 1. An injector will not work with compressed air. The source of power in an injector is due to the condensing of the steam which increases the velocity of the water and thus enables it to work against the pressure of the boiler, which supplies the steam. Not being able to use air in this manner it would not work at all.

2. The modern locomotive boiler is fed by an injector.



A Hart-Parr Gasoline Tractor pulling 990 Bushels of Wheat at Groton, South Dakota.

A DEAD animal ain't giner'ly wurth more'n what his pelt will bring in the open market, minus the fees an' commissions of them rascally agents who come down here to swap trade with us an' get the lion's share, an' the jackass', too—me an' the rest of the hunters down here bein' mostly the jackasses—but a live animal is an ontsartain commodity that has what Captain Kennelly calls "possibilities." I'm meanin' by that that an old diamond back rattler's skin an' teeth an' rattles ain't wurth much more'n \$5 down here, but a live rattler shipped up north in a cage may bring \$25, an', ag'in, it may be knocked down for an even hundred.

So Captain Kennelly ain't never been in the killin' bisness. An' I was brought up by Captain Kennelly! "Live an' let live," that's been our motto, an' we've waxed fat—the captain weighs 200, an' I ain't



I pitched headforemost through the air.

far behind—an' wealthy, not millionaires exactly, but middlin' well to do.

We ain't never regretted bein' kind an' consid'rate to the animals an' birds—never except onct, an' then the captain said 'twas my fault. I ain't disputin' him in that, but there is room for a dif'ence of opinion.

We'd been up the Caloosahatchie one winter tryin' to bag snakes birds an' other creepin', crawlin' an' flyin' critters, when we got wind of a mighty big, sassy mountain lion rendooovooin' up near Wadin' Landin'. The captain decided at onct that we'd bag the critter. Mountain lions was bringin' pretty handsome prices then—the Floridy variety bein' a little underpriced, for they ain't no bigger'n a good size dog.

The captain an' I sailed up the Caloosahatchie an' went campin' on that big fellow's trail, an' before

On Barton's Reef : A Sailor's Yarn

BY GEORGE ETHELBERT WALSH.

a fortnight we had him clip an' clean aboard the Marthy Ann, tied toe an' nail an' a-roarin' in a box on deck as though he'd like to eat us alive. We was mighty tickled at our prize, an' we figered on a couple of hundred apiece when we landed him north.

The Marthy Ann warn't much of a sailboat, but she was a lubberin' old craft that did dooty for us for well nigh a dozen years. When we set sail down the Caloosahatchie the captain says:

"Steve, can't you take the Marthy Ann to Charlotte Harbor alone? You can hand the critter over to the railroad people there an' get a receipt for him. I want to get off at Fort Myers and run up a spell to see Cousin Obadiah. He's real sick, they say."

I warn't goin' to stand in the way of the captain's seein' his sick cousin, so I answered with affer-mashun an' said I'd run back to Fort Myers in a couple of days an' pick him up. The captain was mighty pleased, but when I landed him at Fort Myers he sort of suspicioned somethin' an' said:

"You think you can manage it alone all right, Steve?"

"I'll land this old patriarch in Charlotte Harbor before night or I'll drown him in the gulf tryin' it," I answered promptly.

I didn't know that I was makin' a pretty sure guess of what I'd be doin' before sundown. I jest hove off from the dock an' turned the Marthy Ann's nose toward the gulf. I ain't much of a deep water sailor, but I knew the coast up to Charlotte Harbor tol'rably well an' I didn't have no misgivin's.

That lion was mighty quiet-like at first, but when we got away from the land an' he began to sniff the salt air of the gulf he sort of got oneeasy. He was gettin' out of his element, an' he felt sort of homesick. Mebbe it was seasickness. I dunno which. Anyhow, he roared an' whined an' scratched to beat the band. He jest kept me company with his noise, an' I didn't have no time to get lonesome.

Onct or twice he got so scratchy that I took a look at his cage to see if 'twas all right.

Barton's reef is jest ten miles sou'-west of Charlotte Harbor—a nasty little, treach'rous shoal that sticks out of water at low tide an' keeps out of sight at flood. Tain't charted, an' sometimes a ship trips up on it an' jest naturally rips herself to pieces tryin' to get off ag'in.

I don't know what made me forget Barton's reef, for I'd been round it a dozen times, an', come to think of it now, I'd been nigh wrecked on it onct or twice. I ain't got no

excuse to make except that lion must have made me forgetful by his everlastin' roarin'.

First thing I knowed a puff of wind keeled the Marthy Ann over, an' before I could ketch her up ag'in we struck somethin'. It was only sand an' mud, but the keel stuck there, an' the next wind slab-banged the old lubberin' craft clean over on her side. I wasn't lookin' for the shock an' pitched head-foremost through the air an' landed 'bout twenty feet away.

When I went down into the water I expected to find bottom somewhere less than a mile or two, but the sudden way in which I stopped showed me that I was on Barton's reef. I was standin' on my head in 'bout a foot of water. There was some mud, an' that made sticky standin', but when I finally got my head out of it an' the water cleaned out of nose an' mouth the Marthy Ann had drifted away in deep water.

I ran after her, but she was holdin' her own so tantalizin'-like that I couldn't gain an inch. I swam roun' for some minutes, an' then to save my life I turned back to the reef. I could see the bare back of it jest shinin' above the gulf not more'n ten yards away. I ain't much of a swimmer, but I made double quick time to that reef.

I hadn't thought much 'bout that lion all this time, so excited was I over the loss of the Marthy Ann, but now I jest gasped for breath an' hove a sigh of relief. If I'd lost the Marthy Ann, I'd saved the lion. There he was crawlin' out of the water upon the reef as limp an' frightened as a water rat with a dog on his trail. His big cage was floatin' away with the tide, runnin' a close race for shore with the cap-sized boat.

I saw how things had happened. The Marthy Ann had dumped the cage an' lion on the reef, an' the blow had bust open the slats, an' there you are! The lion was free to go an' come. When I swam to the reef he had full possession, but he was so wet an' frightened that he jest sat there an' shivered an' roared.

"You great, big ornery coward," I says, shakin' my fist at him. "You ain't got away yet, an' I'll keep you here until the captain comes for us."

The reef warn't more than fifty feet long and twenty wide, but there was room enough for both of us. I crawled up an' tried to dry my clothes. At first the lion noticed nothin', but roared for help. Then he got a sight of me an' slunk to the other end of the reef.

"You keep there," I says, feelin'

better by talkin' to him as if he was a human bein', "an' don't you come on my end."

We both felt better after we got dried off a bit. The sun was pretty hot an' it scorched the water up like a hot iron. First thing, then, that big critter began to lick himself an' then he eyed me out of the corners of his eyes. I didn't partic'lar like the way he did it. It seemed as if he grinned an' then shook his head to show me that he warn't hurt.

Well, I suppose nothin' would have happened if the tide hadn't come up and made Barton's reef look like a turtle's back. The water jest rose up higher an' higher, an' every minit we had to move closer together.

The lion didn't like gettin' his paws wet an' was for retreatin' toward me, an' I didn't fancy closer quarters with him an' jest stayed as near my edge of the reef as I dared.

Now, as I have remarked, the



My, how we spit an' tore an' cuffed each other

Floridy mountain lion ain't no kind of a fighter, but when he's cornered I've some respect for him. I saw right away that trouble was a-brewin'. When the reef got too small to hold both of us one or t'other had to git, an' I didn't fancy bein' the one to go a-floatin' adrift on the gulf in that latitude.

"Now, you great big cuss," I said, addressin' his lionship, partly to keep up my courage, "I ain't huntin' for trouble, but if you seek it I'll do my best to make things mighty onpleasant for you on this little sand speck."

Right then a change came over the critter. He seemed to accept the challenge an' began to growl and crouch. I jest faced him an' got ready for his spring. But the tide comin' up from behind lapped a wave over his tail an' made him turn roun' like a shot. He crept an' inch closer an' watched for things to develop.

(Continued on page 63.)

NOTICE!

SEPARATE TENDERS will be received by the undersigned until January 25th, 1909, for the Sale of the following described parcels of goods, being the balance of the Implement Stock of the Estate of the Balfour Implement Company, Ltd. Tenders will be received for any part of the following parcels. A certified check amounting to 10% of the tender to accompany each tender, balance to be paid in cash upon acceptance of tender; the highest or any tender not necessarily accepted.

All goods not disposed of as by aforesaid tender will be exposed for Sale on February 17th, 1909, by Public Auction, at the Warehouse of the Imperial Implement Company, Salter and Sutherland Streets, Winnipeg.

Parcel 1.

DOWAGIAC DRILLS

- 1 14 Shoe Drill
- 5 16 Shoe Drills
- 1 12 Single Disc Drill
- 2 14 Single Disc Drills
- 1 14 Double Disc Drill
- 2 16 Double Disc Drills
- 4 14 Hoe Drills
- 3 16 Hoe Drills
- 4 20 Hoe Drills

Parcel 2.

CASE PLOW EXTRAS

- 10 16 in. A D Stubble Bottoms
- 9 14 in. A D Stubble Bottoms
- 2 12 in. A D Stubble Bottoms
- 5 16 in. S G Stubble Bottoms
- 2 16 in. A S Stubble Bottoms
- 4 14 in. G E Stubble Bottoms
- 12 14 in. Manitoba Breaker Bottoms
- 8 16 in. Triumph Breaker Bottoms
- 9 16 in. Ajax Breaker Bottoms
- 4 14 in. Ajax Breaker Bottoms
- J. I. Case Repairs
- Dowagiac Repairs
- Sundry Repairs

Parcel 3.

WALKING PLOWS

- 3 16 in. A S (C D) Walking Plows
- 1 14 in. A S (C D) Walking Plow
- 4 18 in. A S Walking Plows
- 2 16 in. A S Walking Plows
- 1 96 Tooth Critic Lever Harrow
- 1 144 Tooth Critic Lever Harrow
- 14 Sets of 102 Tooth Boss Harrows

Parcel 4.

MISCELLANEOUS

- 17 Wheelbarrows
- 3 No. 1 Daisy Grinders
- 3 No. 2 Daisy Grinders
- 4 Pumps
- 2 Treadmills
- 1 Second hand Horse Power
- 1 Derrick

Parcel 5.

- 1 30 tooth Rake
- 1 36 tooth Hay Rake
- 1 8 ft. Binder (Walter A. Wood's)
- 1 Set Disc Harrows 14 x 16
- 1 Set Disc Harrows 14 x 18
- 2 16 in. Brush Breakers
- 1 14 A S Stubble Plow
- 2 20-6 Dowagiac Shoe Drills
- 1 16-6 Dowagiac Double Disc Drill
- 1 20-6 Dowagiac Double Disc Drill

Parcel 6.

- 1 16 in. A D Sulky
- 1 24 in. A D Gang
- 1 24 in. S G Gang
- 1 28 in. A D Gang
- 1 18 in. Dowagiac Shoe Drill
- 2 Wagon Seats
- 1 Set Bob Sleighs

Parcel 7.

- 1 20 Dowagiac D D Drill
- 2 16 Dowagiac D D Drills
- 2 14 in. Manitoba Prairie Breakers
- 2 16 Case Prairie Breakers
- 1 14 Case Prairie Breaker
- 2 14 Comb Plow (Wilkinson)
- 1 338 $\frac{1}{2}$ A N Stubble Plow
- 2 336 $\frac{1}{2}$ A N Stubble Plows
- 2 334 $\frac{1}{2}$ A N Stubble Plows
- 1 16 in. Ajax Breaker Bottom
- 9 14 in. Manitoba Breaker Bottoms
- 8 16 in. Manitoba Breaker Bottoms
- 3 16 in. A N Stubble Bottoms
- 1 16 x 16 Case Disc Harrow, No. 86
- 1 14 x 20 Case Disc Harrow, No. 70
- 1 128 tooth (No. 137) Critic Lever Harrow with D B
- 1 144 tooth (No. 138) Critic Lever Harrow with D B
- 2 10 foot Rakes (Walter A. Wood)
- 2 4 horse Tandem Hitches
- 2 Sobe Eveners
- 3 3 horse Hawkeye
- 3 Draw Bars for 102 tooth Boss Harrows
- 2 10 in. Tip Top Boxes
- 1 8 in. Petrolia Tip Top Boxes

Parcel 8.

- 1 Pair Shafts
- 2 12 in. A D Gang Plows
- 1 16 in. A D Sulky Plow
- 1 16 in. Ajax Sulky Plow
- 4 20-6 Dowagiac Double Disc Drills
- 3 18-6 Dowagiac Double Disc Drills

J. A. ACHESON, Official Liquidator
617 Union Bank Building - WINNIPEG, Canada

THE FUNNY

WORLD

Chicago
ENG. CO.

The matter on this page lays no claim whatever to originality. The one idea is to amuse, to provoke a smile. If it fulfills this mission we shall feel amply repaid for the time and labor expended in its preparation. Have you read or heard something that has made you laugh? Has it chased dull care away for a time? Then pass it along for publication in our Funny World. Such contributions will be greatly appreciated.

Jones: "Is that cheese good?"

Shopkeeper: "Good, why it is unapproachable!"

"What is the best crop to raise in such a rainy district, as this?" asked a tourist of a witty farmer.

"Umbrellas, sir."

A farmer living in a wet and late district in the East of Scotland, found times and seasons so against him that he decided not to renew his lease. Meeting his landlord the other day, he said:

"I can mak' nothing o' sic wat and sour land, and I'm no' goin' on wi't, or I'll be ruined."

"Well, John, take time to think o't," said the landlord; "no doubt we'll be able to come to terms. I might let you have the farm at a reduction on the acre."

"Ah, laird," replied the farmer, "your land should be let by the gallon, no' by the acre!"

"I lately passed through North Saskatchewan. Say, but that station agent has a lot to do! When the train comes in, he's got to sell tickets, check the baggage, fix the signal lights, put the danger lantern at the street crossing, post the trains on the bulletin board, operate the telegraph instruments and carry the messages."

"Heavens! was he doing all that?"

"No; he was asleep."

A certain bishop once in his early days officiated at a christening in a fishing village. The father, awkwardly holding his first-born, was visibly embarrassed, and his nervousness was not decreased by the sudden wailing of the infant. When the time for the sprinkling arrived, the clergyman noticed that the father was holding the child so that its fat little legs pointed towards the font. "Turn her this way!" he whispered, but the father was too disconcerted to understand. "Turn her feet round!" the clergyman whispered again; but still there was no response. The situation was awkward, when an old sailor in the back of the church, put his hand to his mouth and roared, "Head her up to the wind, Jack!"

A certain prosy preacher recently gave an endless discourse on the prophets. First he dwelt at length on the minor prophets. At last he finished them, and the congregation gave a sigh of relief. He took a long breath and continued:

"Now I shall proceed to the major prophets."

After the major prophets had received more than ample attention, the congregation gave another sigh of relief.

"Now that I have finished with the minor prophets and the major prophets, what about Jeremiah? Where is Jeremiah's pk ce?"

At this point, a tall man arose in the back of the church. "Jeremiah can have my place," he said. "I'm going home."

On another occasion, after a prosy parson had "firstly," "secondly," and "thirdly," until old Deacon Jones became uneasy and shortly got up and said: "Parson, please lock the door when you get through; I'm going home."

A real widow may not be as wise as a grass widow, but she knows where her husband is when it comes night.

The jury had been locked up for hours. At last the officer of the court (who shall be nameless), was instructed to provide refreshment. "Shall I order twelve dinners?" he said to the foreman. "Make it eleven dinners and a bale of hay," replied the weary foreman, "we have an ass here."

O'Flanagan came home one night with a deep band of crape around his hat.

"Why, Mikel!" exclaimed his wife, "what are ye wearin' that mournful thing for?"

"I'm wearin' it for your first husband," replied Mike, firmly. "I'm sorry he's dead."

Teddy was saying his prayers at bedtime one night not long ago. Kneeling down at his mother's knee, the sleepy little fellow began, "Now I lay me down to sleep, I pray the Lord my soul to keep"—he paused. "If"—his mother prompted. "If he hollers, let him go; enie, menie, minie, mo."

"Just heard about your being ditched, old fellow. Awfully sorry. Wife out of the hospital yet?"

"Nope."

"Pshaw! That's too bad. It must have been a pretty serious affair."

"Serious! I should say it was serious. I wrecked the radiator and cracked the front axle!"

"A corruptionist," said Senator Depew, "once entered a voter's house; in the voter's absence, he pleaded his cause to the man's wife. Finally, spying a wretched kitten on the floor, he said:

"I'll give you \$25 for that animal, ma'am."

"She accepted those terms."

"The corruptionist, thrusting the kitten in his overcoat pocket, rose to go. At the door he said:

"I do hope you can persuade your husband to vote for me, ma'am."

"I'll try to," said the woman, "though Jim's a hard one to move when his mind's made up; but anyhow you've got a real cheap kitten there. Your opponent was in yesterday and gave me \$50 for its brother."

An English tourist in Ireland, reached a small village some miles from any railway station. At the village grocer's he saw an old farmer trying to sell a load of very fine potatoes. He was offering them at the rate of half a crown a hundredweight, but the storekeeper was reluctant to buy, as he had already such a large stock.

"Why," says the tourist, "if you had those potatoes in London you could get six shillings a hundredweight for them."

"D'y'e see that well of wather over there?" says the farmer.

"Yes, I do."

"Well," says the farmer, "if I had that well of wather down below where the ould boy is, I cud get a shilling a glass for it."

"Yes, she has reached the heights," said one Christian Scientist, speaking of another; "now when she wishes to take a bath, she simply becomes plunged in thought."

Pat—I hear yer woife is sick, Moike?

Mike—She is thot.

Pat—It is dangerous she is?

Mike—Divil a bit. She's too wake to be dangerous any more!

Judge—"You are privileged to challenge any member of the jury now being empanelled."

Defendant—"Well, thin, yer Honor, O'll foight thot small mon with one eye settin' in the corner."

"The climate here is salubrious, isn't it?" remarked the tourist.

"Say, friend," replied the native, "jest write that there word down for me, will yer? I git tired o' swearin' at this climate in the same old way. That's a new one."

The other morning while on the train, we overheard a traveling man repeat the following bit of wisdom:

"The grasshopper eats the farmer's grain,
The hobo steals his honey,
The bedbug bites his juicy back
And the mail order house gets his money."

The surgeon of a hospital, paying his visits to the patients one day, came upon a cot whereon lay an Irishman, who was groaning loudly.

"Oh, come, my poor fellow," remonstrated the surgeon, "try to bear your pain like a man! It's no use kicking against fate."

"Shure, you're roight, sorr," groaned the Irishman, who had been serverly struck by a mule—"specially whin they're the fate of a mule!"

A young Swede called at a farmhouse for work. Upon being asked how much he wanted, he said:

"I come for five dollars a month if you eat me at the farm, but for \$25 I eat myself over to Mr. Johnson's."

"You say you don't like the policeman on this beat, Bridget?"

"No'm, I don't."

"But did I not see you feeding him the biscuit I made?"

"Yessum."

"WHICH did the Lord make fust, Brudder Johnson, de hen or de egg?"

"De hen, ob cose—de egg comes from de hen."

"Yais, but de hen comes from de egg, too."

"Now, see yar, Brudder Johnson, if de Lord had made de egg fust, he'd had to make an incubator to hatch it, a sawmill to get de wood fo' de incubator, a tin mine for de tin, a winder-glass factory fo' de glass, a cotton mill fo' de cotton battin', a drug store fo' de thermometer to tell de temperature. No, no, Brudder Johnson, de Lord dun simply make a hen fust, and ah reckon he didn't make a coloured man fo' a year or two after."

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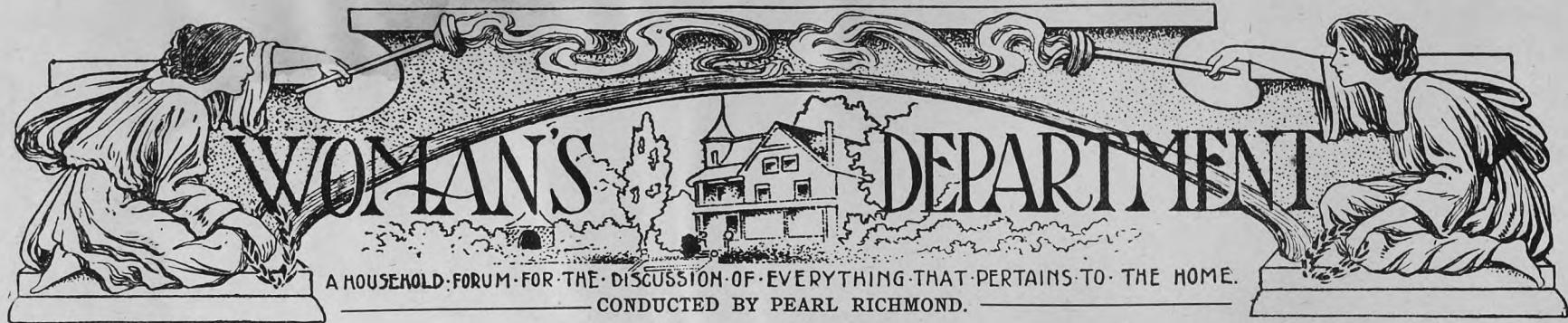
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The Old and the New.

I LEANED down over the cavern
Time dug for the Old Year's tomb,
And laid my dead beside it,
For the sexton gave me room.
'Twas a skeleton form of sorrow
At last I buried away;
It had stalked through my soul's castle
And haunted me many a day.

And then, as I peered down deeper,
I saw there yet was space
For a grudge that long had shadowed
My heart's most sunny place;
And I cast the blighting burden
In the grave where it belonged,
As I said: "There are fates more bitter
Than to be the one who is wronged."

And down on the lid of the coffin
I laid a vain regret
For a time and a pleasure vanished,
For a day whose sun was set;
And just as the tomb was closing
I flung in a selfish thought,
To lie in the dark and moulder,
And perish as it ought.

And while the bells were ringing
Their midnight chime, I said:
"Since good endureth forever,
Let the dead year bury its dead."
And then, like a radiant angel
Outlined in the skies above,
With the glad New Year in His bosom,
I saw the Spirit of love.

And he spake: "It is only sorrow
And sin and folly that dies;
Whatever was good in the Old Year
In the soul of the New Year lies.
As you stand on the grave of error,
Look up, for the stars are true!
Let go of the things departed—
Reach out for the things that are new."

A HAPPY NEW YEAR.

DEAR SISTERS:

I wish every one who reads this Department—A very happy New Year. We desire to make these pages as helpful to our women readers as possible, therefore will the women help the editor in this way?

To everyone who sends in the best answer to each of the following questions, we will send a splendid book of recipes.

What part of the Woman's Department do you find most helpful, and why?

What part would you like to see dropped?

What improvement would you suggest?

Is the Woman's Department helpful to you?

I hope many will send in answers and let us all work together to make this Department a feature that will be indispensable in every country home in Western Canada, as well as in other homes.—THE EDITOR.

How to Develop Individual Charm and Magnetism.

By Mlle. JEAN DUPRE.

TEACH YOURSELF ANIMATION AND VIVACITY.

Helleu declared the Princess of Pless to be the most beautiful woman in the world.

Yet the Princess of Pless sent to Paris for a French woman of title to come to England and teach her "how to be charming."

Many beautiful women are disappointing when you become acquainted with them because of their dull, stupid facial expressions and negative mental and physical attitudes.

The Princess of Pless took lessons in animation from a French woman. She learned to be magnetic and to use this magnetism to draw people to her.

You know the French women have a reputation for beauty. Study their features, and you will find that many of them are not beautiful. Their charm lies in their manner, their vivacity, their ability as conversationalists. They are taught to be magnetic from the cradle.

The ancient Greeks are reputed to have possessed the most perfect forms, in symmetry and proportion, of any of the world's nations, yet when we look at their exquisite sculpture we are conscious that there is something lacking, particularly in their figures of men and women.

In speaking of Greek art, Sir Charles Bell said: "In high art it appears to have been the rule of the sculptor to divest the form of expression."

That is just the defect in so many

present-day beautiful women, the keynote of their failure to attract. Perfection of feature, of form, all that goes to make up proportion, fails to hold unless there is human softness, something to love, that subtle, desirable quality which commands instant recognition.

THIS SOMETHING IS INDIVIDUALITY.

It is the living, thinking, active being, that looks and listens, feels and speaks, to which we speak, and with which we sympathize.

EVERY MOTHER SHOULD TAKE INTO ACCOUNT HER OWN INDIVIDUALITY.

She may acquire individuality and magnetic charm by cultivation of the mind, and care of her personal appearance and the clothes she wears.

It is not enough that her gowns be beautiful in color and design, but her clothes and her home must bear the impress of her own distinctive character.

DON'T BE AFRAID TO EXPRESS YOURSELF.

Don't be afraid to assert your individuality.

If there are big sons and daughters, there is all the more reason why you should not lose one particle of your enthusiasm or personal magnetism. If you would keep in touch with the interests of your own growing children along their different stages of development, you will have to keep abreast of them in thought and expression.

Wit, imagination, clear reasoning ability, creative power, and a magnetism that is hypnotic are constantly demanded of the mother with grown sons and daughters.

The day when a woman was expected to be merely a household slave and nothing more, is far back in other ages.

Something besides this is expected of her to-day. And it is good for her progress and self-respect that this is so.

It tends to such development of self as will make her mean some-

thing in her home, to her children and to her friends.

EVERY MOTHER SHOULD READ AT LEAST AN HOUR A DAY.

The average mother has too little time for reading, and when she has time she is too tired to read anything but the lightest of fiction. Fiction is a good bracer (the right kind of fiction) upon occasion, but it is not the reading that this one particular hour ought to be given up to. Instead, something that contains earnest thought, either upon a pertinent current topic or otherwise, is best.

READ AT ONE TIME ONLY SUCH AN AMOUNT AS CAN BE EASILY DIGESTED.

Concentrate the mind upon the thought gained. This will be a great help in concentrative power, and will develop versatility of thought. Learn also to observe things and people in a thoughtful way. It is a better occupation than gossip.

I know a mother who reads a thing, then goes off alone and discusses it clearly and intelligently with herself. No matter whether the subject is poetry, politics, or of household consequence, she discusses it pro and con, never allowing either half of her mental self to be betrayed into sympathy with the other half.

The result has been the highest possible form of individual development.

One of the greatest secrets of magnetic charm lies in the ability to concentrate one's entire forces upon the subject at hand. It is not an elocutionary trick. It is a God-given power within each of us.

THE POSITIVE OR NEGATIVE STATE OF THE MIND CONTROLS MAGNETISM.

Our attitude is always either positive or negative.

We are mentally negative when we are thinking, and that is why one is so quick to feel it when we are thinking of something other

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than the thing that is being told us.

When the weight of the body is on the heels, we are in a physically negative attitude, and become at once out of poise. We can never hold the thought of a listener when either the attitude of the mind or of the body is negative. We lean away from things we dislike, and lean toward the things we like or admire.

The French woman is so lovable because she takes you right to her heart and keeps you there. Her attitude is always positive. When you are talking to her she concentrates her mind upon what you are saying, and upon that alone.

Children can never reach a mother's heart whose brain is constantly employed elsewhere when they are confiding their little joys and sorrows to her inattentive ear.

Don't think of one thing and talk of another. Don't pretend to listen to your children and to answer their questions when you are not thinking of what you are saying.

To outside friends the mother who cannot concentrate her attention upon a single subject is a dreadful bore.

WHO IS INTERESTED IN THE CONVERSATION OF A WOMAN WHO FLUTTERS LIKE A BUTTERFLY FROM ONE TOPIC TO ANOTHER?

Read that which has been written by thinkers. Read a little at a time at first, thinking upon each paragraph. Observe characteristics in people. Cultivate the habit of remembering what you see when you are out for a walk, or elsewhere. You will soon be surprised at your ability to talk consecutively; to concentrate.

There is a divine spark in each of us. In mothers the spark is often a flame. Every mother has within herself the power to be magnetic and charming, first through her mind, and, second, by the clothes she wears.

THERE IS A GOOD DEAL OF SHOCKING INATTENTION TO THE SMALL DETAILS OF DRESS AMONG MOTHERS.

Clothes mean a great deal in the portrayal of a charming personality. Ask the bright, vivacious, ever-animated French woman, who gives so much thought and care to the daintiness of even her lingerie. She will tell you that your clothes and the way you wear them is half the battle for beauty won.

She studies her marked characteristics of figure and face, and never wears clothes that will accentuate her unattractive points; she wears such materials and uses such pattern designs as will cover these up.

It is true that colors and patterns that would be beautiful on one woman would make another hideous.

A WOMAN'S CLOTHES SHOULD EXPRESS HERSELF.

Even the house gown in which she works should be considered in

the light of its becomingness, expressing the wearer's good taste and individuality.

It is not the quality of your gown, but your general get-up, that counts. It is YOU YOURSELF expressed through your vivacious charm of manner; through your clothes and the way you wear them.

You can teach yourself animation of both mind and body.

You can develop individuality and magnetism.

Sewed Up For The Winter.

Here is a true story told by one of the principals of the Chicago public schools. After some difficulty she had succeeded in getting the Board of Education to provide bath-rooms in the basement of her school, and a bath-attendant whose duty it was to scrub little children who came to school from homes where there was neither time to attend to these things nor much water. One day this attendant sent to the principal a little girl bitterly crying, who refused to be bathed. It was evident at a single glance that she much needed a dose of soap and water, but nevertheless she steadfastly declined to be scrubbed.

"My ma sewed me up only yesterday," she wailed, "and she told me I must stay sewed till next summer. If youse unsew me I'll get licked."

And, sure enough, all of her little clothes were sewed up in the back, and in every possible place which could be searched by the unkindly winter air.

When one thoroughly comprehends this fact in all its bearings, and knows that these children must sleep in the same clothes that they wear during the day, one understands the peculiar oppressive odor which hangs about them wherever they go. And one gets an understanding of one more reason why they die off so fast. The undertaker's business is the only business that really flourishes in these dense neighborhoods.

Country children, too, of a better class, often sleep in their clothing—if not in their dresses, at least in their underclothes.

Now, the result of all this is that these clothes grow to be a sort of second skin; and to take them off and wash the underlying skin, especially in a cold room and with cold water, is a distinctly painful performance. Very likely, in a good many cases, it does give rise to chills and colds, so that the family prejudice seems to have some foundation in fact.

A little while ago we were all much scared to learn about the many microscopic enemies, called germs, which lie in wait for us in our food, in the water we drink, and in the air we breathe.

The main aim of the bath, after washing away the grosser collections of germs, is to let the skin



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breathe, and so keep the blood just beneath it in a fresh condition, able to destroy invading organisms.

The sensible thing is to give many comfortable, warm baths—through the winter as well as through the summer. Such baths may preferably be given every day, but if this proves exhausting, every other day, or even twice a week, will be enough.

Fads for Mothers.

There is no greater blessing for a worker, than a fad. And, as a majority of mothers are very hard workers, it follows that fads must prove most beneficial to mothers.

Fads seem to possess magnetic qualities. The busiest person in the world, who has a fad will find time to devote to it. For after the fad has won you it holds you. It is a voice ever calling, a hand ever beckoning.

In pursuit of a fad one is drawn away from the atmosphere of everyday cares and worries into a brighter, purer ether, where toil and trouble and vexation of spirit are forgotten. A fad is a better tonic for jaded nerves than any a physician can prescribe.

It really doesn't matter much what the fad is. What the weary worker needs is something that will soothe, and refresh, and revive, and stimulate. A fad will do all these things. If any mother doubts the truth of this statement, let her adopt a fad at once and prove or disprove it, herself.

If the mother can succeed in interesting one or more members of her family in her fad, so much the better. One loves to share the joys of one's pet hobby with sympathetic companions. But if nobody but just herself is interested in her particular fad she cannot fail to derive great pleasure and benefit from it. Next to sleep, a fad is the most restful thing yet discovered.

Before the Boy is a Man

BY ROY WINCHESTER

"I was happy so long as I could keep him in knee pants," said a sadly perplexed little mother to me one day, as the subject of her remark—a boy of fifteen—hurried down the street to join a group of youths that were waiting for him at the corner. "He is no longer a boy, neither is he a man. He is a conundrum to me, a puzzle to his father and a mystery to himself. Every faculty of his nature assumes the shape of a question mark. He is constantly speculating on the future, wondering what it will bring to him. He grows so fast, studies so hard, plays so violently. He has periods of boisterous self-assertiveness which try our patience to the limit. Then again he is timid and bashful as a girl, is afraid of himself, of me, of his father, and everybody. Yesterday he attended

a lecture. The speaker was a Western lawyer of national repute. When Robert came home he announced to the family that he had settled on the law as a future profession. To-day Mr. D—, a retired banker, dined with us. When our guest left Robert declared that he would be a financier. Tomorrow he may decide on medicine, and so on through the list of professions. His preferences will be swayed by the last man he meets. He is so impressionable. I don't know what will become of him!"

No longer a boy and still not a man! How my heart goes out to the youth in this transition period of his life! While passing through this trying epoch, he is most apt to be misunderstood and misjudged by parents, teachers and friends. His faults assume colossal proportions to himself and to those who should help him overcome them. His virtues have not yet appeared. He is like a coin ready for the stamping machine; like clay in the hands of the potter. This is the time when parents and teachers should use the greatest care and tact in dealing with him. He lacks judgment, is not partial, and can be molded for either good or evil. His mettle is untried and his courage has not been daunted by repeated failures. He is not cynical. He sees the flowers in his path, but dreams not of the thorns. It takes a wise, steady, patient head and heart to guide his frail craft over the dangerous rapids in his stream of life. At this time his voice changes. Like his moral nature, it is uncertain, queer, varying between the child's treble and the man's bass. A careful teacher will bring out all the latent possibilities of that voice and leave it deep, pure, resonant—expressing character in every inflection. But if it is neglected, or, what is worse, badly managed, it will be rough and discordant through life. The same is true with reference to his moral nature and training. Few boys understand the meaning of this trying period in their lives. Sad indeed is the lot of the boy if those whom nature has appointed his guardians fail to make him profit by their greater experience and knowledge.

"Robert isn't the boy he used to be. There was a time when I could look into his soul with a mirror and lamp. Now he shrinks from and actually resents the smallest intrusion," continued the mother. "A hard shell is growing around him. He goes to church reluctantly. His old beliefs seem to have taken a tumble. He startles and horrifies me by his questions. I'm afraid he will turn out a scoffer and an infidel." There was a tearful catch in the plaintive voice.

"Robert will turn out all right," I hastened to assure her. "He went through mumps, whooping-cough and measles, without taking harm, because you gave him the very best kind of nursing during the

time of the disease. It's pretty much the same now, only that, if the case is unwisely managed, his moral nature may be dwarfed and stunted for life. He has entered a great big world, remember. He is confused with its complex problems. In drifting from calm bay into stormy sea, with no knowledge of navigation, shall we expect him to steer clear of all obstructions? Besides, he has now a new set of motives and impulses unsuspected before. These often rush upon him with such force as to alarm him and he is carried away by them. We know there must be a general breaking up when nature emerges from winter into spring. His old loves, ambitions and preferences have been displaced by the new. There are yearnings and attractions from heaven and hell, and he is often puzzled to know what to do with them. There is confusion without and within. A conflict is raging within his soul. Things are not as hitherto they have seemed. Be careful that you do not annoy him overmuch by frequent expression of your fears regarding the outcome of the struggle through which he must pass. Bring all your tact to bear in the treatment of his faults. Do not speak of them as such. They may be virtues in the making. Never scold him. Never by word or look or deed reveal the fact that you are shocked at his incongruities or inconsistencies. Assure him of your sympathy, your unfailing interest in his welfare, and make him feel that you have faith in him, even if he fails to reward you with his confidence as in the days when he said his prayers at your knee. If he is shy and reticent confide in him. Do not widen the breach by evincing alarm or distrust. Be companionable to him. Ask his opinion whenever practicable, and never for a moment try to force him back into the garments he has forever outgrown. Make him feel that you recognize the fact that he is almost a man—that he is assuming manly responsibilities, acquiring manly rights and privileges, and that he must soon take his place among men—become—perhaps—a leader of men and affairs. Then, if you surround him with the most cheerful home influence and make him feel that there is not a place in the house too good for him and his companions, clothing the fireside with a sweetness and sanctity which shall outshine the garish light of the brilliant hall or saloon, you will throw around him a safeguard which the forces of evil cannot break down. The boy does not live who will not appreciate and finally richly reward such help and encouragement from his mother."

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Recipes.

CREAMED ONION ENTREE.—A simple but delicious entree is made in this way. Peel a good-sized onion and cook in butter, and a little hot water to prevent browning. When the onion is soft and mushy make a cream sauce in the dish in which the onion has been cooked, using two tablespoons each of butter and flour and a cup of rich milk or cream, with pepper and salt for seasoning. Slice into this creamed onion sauce two hard-cooked eggs and serve very hot in ramekins with fingers of hot buttered toast.

FRIED PARSNIPS.—Wash them carefully and scrape. Boil until tender. Cut into lengthwise strips. Dip these into molasses, drain well, drop into hot butter and fry brown on each side.

CREAM POTATOES WITH GREEN PEPPERS.—POTATOES, 2 GREEN PEPPERS, CREAM OR MILK, FLOUR, BUTTER, SALT AND PEPPER.

Peel enough Irish potatoes to make a generous quart after they have been cut in the form of dice. After removing the seeds from two Bull Nose green peppers wash them well and cut them into thin rings. Put the peppers and diced potatoes into a stewpan and cover with boiling water. After cooking for eighteen minutes pour off the water and sprinkle the vegetables with flour, salt and pepper. Turn into a baking-dish, cover with cream or milk, dot with butter and cook in a hot oven until nicely browned. Then serve at once.

BLUEBERRY MUFFINS.—2 TABLESPOONFULS BUTTER, 1 TABLESPOONFUL SUGAR, 2 EGGS, 1 CUPFUL SWEET MILK, 2½ CUPFULS FLOUR, 1 CUPFUL BLUEBERRIES, 2 TEASPOONFULS BAKING POWDER.

Mix the butter and sugar until they become creamy; then add the eggs beaten light. Sift the baking-powder in with the flour and add the flour, alternately with the milk, to the butter-sugar-and-eggs mixture. Finally add the berries, lightly dusted with flour. Bake in buttered muffin-pans for half an hour. These muffins are intended to be hot, and eaten with butter, but they are also good served cold.

GERMAN COOKIES, (For the little ones).—Stir until foamy one and one-third cups of powdered sugar and three eggs, add a few drops of vanilla and two cups of best sifted flour. Oil tins and sprinkle them with flour, then with a teaspoon drop small round heaps far enough apart so they do not touch and bake in a moderate oven until a very light brown.

FINE COOKIES (For the tea table).—Stir one-half cup of butter, seven table-spoons of powdered sugar and yolks of three eggs until creamy. Mix in one cup of almonds grated and one and one-half cups of finely sifted flour. Sprinkle the baking board with flour, roll out the dough to one-eighth inch thickness, cut with a round cutter brush with yolk of egg and tablespoon of milk and bake on floured tins.

BUTTER COOKIES.—Stir very foamy one cup of butter, one-half cup of sugar, one whole egg and two yolks; then add two cups of finely sifted flour, flavor with almond extract. Let the dough rest for an hour, covered, and in a cool place. Then take out on floured baking board and cut out small cookies. Brush with white of egg and sprinkle with granulated sugar. Bake a very light golden brown, on floured tins.

BUND KUCHEN.—Beat well one-half cup of butter with one-half cup of sugar, four eggs, the grated rind of a lemon, one-half pound of raisins, one teaspoonful of salt; add one yeast cake softened in a little warm water, one pint of lukewarm milk and three and three-quarters cups of sifted flour. Work this dough well with a wooden spoon. Butter your baking pan well and sprinkle with flour, pour in your dough and let it raise for three hours in a warm place, then bake in a hot oven, cover the top with paper if it browns too soon and bake for three-quarters of an hour. When done tilt on a plate and sprinkle with powdered sugar.

YORKSHIRE PUDDING.—Mix seven table-spoons of flour with a little salt and three beaten eggs, add sufficient milk to make into a very smooth batter.

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MONTREAL

Beat very thoroughly and pour into a shallow pan which has been previously rubbed with butter. Bake in a hot oven. When done place on an inverted pie plate under the meat, which should rest on a rack above. Twenty minutes is long enough for the pudding to remain under the meat. Success lies in having the pudding previously baked and in not allowing it to absorb a lot of fat.

For a change, we like hot mashed parsnips spread lightly over the pudding before placing under the meat.

Cut or break the pudding into pieces as soon as it is removed from the oven and serve at once with the hot beef and gravy.

SHREWSBURY SAUSAGE.—Chop fine one-quarter of a pound of beef and the same of veal, half a pound of lean pork and the same of bacon, and if it is at hand a very small piece of suet. Season highly with salt and pepper and a little powdered sage. Boil two cups, or more if desired, of yellow split peas until they can be easily pressed through a colander. Season with salt and pepper and a few drops of lemon juice and put the mixture in a baking dish, previously buttered. Slice the meat mixture into half-inch slices and lay over the peas. Bake in a hot oven for three-quarters of an hour. Serve with baked or fried apples.

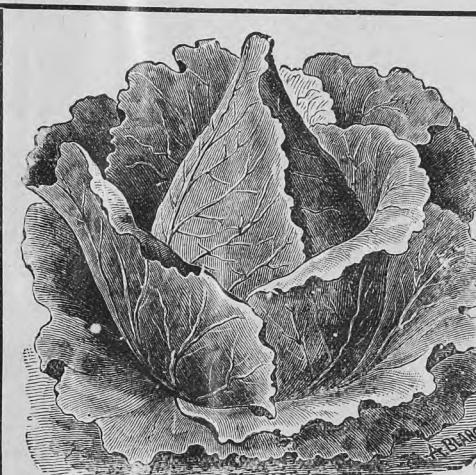
BAKED TRIPE.—An English method of cooking tripe results in a savory morsel for those who like it. Cut the tripe into good-sized pieces and spread over them a little bread and onion stuffing. Roll them up and fasten with wooden tooth-picks. Dredge with flour and spread on each a little soft butter. Bake in a hot oven for half an hour, basting frequently with butter and hot water. Garnish with lemon slices, and pass melted butter.

VEGETARIAN SAUSAGES.—Wash one and one-half cups of lima or pea beans. Cook in salted water in a double boiler until they can be easily mashed. Press through a colander and season with a generous piece of butter, salt and pepper. Add a very little powdered sage. Roll to the size and shape of sausages, dip in egg and cornmeal or sifted bread crumbs and fry in butter, rolling gradually in the pan to brown on all sides. Serve on a platter of boiled cabbage with a plain white sauce.

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In case of a burn with carbolic acid or lye, the speedy application of vinegar will give almost instant relief.—M.M.



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FOR CHILBLAINS

To relieve chilblains, bathe the feet in warm water at night, then rub them with castor oil. This method will cure very bad cases.—Mrs. G. L.

IN CASE OF SICKNESS

In our home, when hot cloths are needed, wet ones are put in a steamer, and water kept boiling beneath. In this way the cloths are more easily handled, and can be applied as hot as needed.—M.M.

A BAG FOR PATTERNS

To a woman who does her own sewing, a pattern bag is a necessary article. A simple and commodious one is made of a square of green denim or other firm material. There are two rows of pockets of the same material, and deep enough to conceal the patterns well. The edges may be bound with contrasting tape or of deeper tone, and tape hangers or rings stitched at each corner allow it to be hung

onto the door or wall space. The contents of each pocket are made known by the name being embroidered thereon—coat, kimono, lingerie, shirt waist, skirt or fancy articles.

E. M. C.

TO MAKE LAMPLIGHT BRIGHTER

After cleaning the lamp well, and filling, place a lump of a small camphor in the oil vessel. This will greatly improve the light and make the flame brighter and clearer.

MARBLES IN THE TEA-KETTLE

To prevent sediment from gathering on the inside of a copper or nickel tea-kettle, keep two or three stone marbles in the tea kettle all the time. This I have tried and found to be so, and it is worth passing on.

REMOVING WARTS

Warts can be removed permanently and safely by an application of a salve made by mixing common table salt into the yolk of an egg. Change the application daily, and within a week they will drop out, all the roots having thoroughly decayed so that they will never reappear.—J. U.



The Fading Year.

WITH silent step and slow,
The old year glides into the
shadowy past;
As tall ships solemn go
Out into ocean's desert, drear and vast.
Oh, with this fading year
Would all unworthy thoughts might
now depart!
Perish each base-born fear
And selfish aim. Lord, cleanse th'
awakened heart!
And with the new dawn, stealing
Upon our household homes with noise-
less feet,
Come every generous feeling,
All heavenly influence mild, sedate
and sweet.
Come with the growing day,
Increase of wisdom bending from
the sky;
Come with fresh airs of May,
Glad hopes, and grateful pulses bound-
ing high.
Come with the summer hours,
Large-hearted love, compassions full
and free;
With autumn's falling flowers
Come holiest trust and peace and
charity.

"The Canadian Thresherman and Farmer City."

NEW YEAR'S Message from
Cousin Doris:
"A Happy New Year to all
of the boys and girls who read the
"Canadian Thresherman and Farmer."
Why there are thousands and
thousands in "The Canadian Thresherman and Farmer" family. Just
think!

Our number is increasing by
hundreds every month. At the
end of every year we pause and
consider what this great increase
means. If all of the homes where
our magazine is read, could all be
put in one section of the country,
we would have a great city of "Can-
adian Thresherman and Farmer"
homes.

Let us call it "The Canadian
Thresherman and Farmer City,"
and imagine that our great mag-
azine is the only one read in the
city, and let us notice the impor-
tance of the firms who advertise in
it, if they were the only business
firms in the city, and also how
much these firms would mean to
the country surrounding the great
city, because the city you know,
could not exist without the help
of the country about it. Now,
then, let the boys and girls search
through the advertisements, and
the one who names the most firms
found in the advertising columns
of "The Canadian Thresherman and

Farmer," will receive a nice book.

These firms, of course, will all
be placed in "The Canadian Thresher-
erman and Farmer City." You
may head your list under this title:
"The Canadian Thresherman and
Farmer City."

Now, let us see who will have
the greatest business city. Begin
with the first page and name all
the firms you can find that adver-
tise in our magazine.

The old prize offer will still con-
tinue for this year, that is, a book
will be given each month for the
best girl's letter, and also one for
the best boy's letter.

Let us have many letters this
month.

Trusting you will form a good
competition in "The Canadian
Thresherman and Farmer City"
contest, and wishing you all a very
happy New Year, I am.

Yours sincerely,
COUSIN DORIS.

Sally Jenkins' Will

I bequeath my doll, Flora Roosevelt Jenkins, to poor Washerwoman Muldoon's Molly.

I bequeath my pair of bantams, Sir Grover and Lady Cleveland Jenkins, to Coachman Ford's lame Tommy.

I bequeath my big picture Bible to my dear old nurse, Aunty Lincoln Washington Rogers.

I bequeath my silver hand mirror to Trilly Truffles, because I think if she could see herself in a glass then she would try to keep her face clean and her hair combed.

All my other belongings I be-
queath to Miss Kindergarten Lovely to give to her slum children.

Signed and testified to in the
presence of myself this 12th day of
May, 1903. Sally Jenkins.

"There," mused Sally, "that's
right, I guess. Sounds just like
grandpa's will. But I wonder how
they'll act when I'm dead and gone,
and they come into their inheritance.
Oh, dear, I wish I knew just what
they'll say! I—I guess I'll give
something now, and then I will
know."

So she got ready—her mother
said she might—and took her best
beloved doll, Flora Roosevelt Jenkins,
over to Molly Muldoon, and

Molly Muldoon could hardly be-
lieve her eyes.

"What, for me?" she exclaimed.
"The first flesh-and-blood, real live
dolly I ever had. See her weeny-
weety eyes joggle! This is just
lovely of you, Sally!"

Then Sally went home, and the
coachman put the bantams in a
basket for her to take over to his
little boy Tommy.

How Tommy opened his eyes
when the cover was raised and
Sir Grover Cleveland Jenkins
crowded!

"My, but he's a beauty!" said
Tommy. "And the little hen is
just like you, Sally. Aren't they
beauties?"

"Oh!" mused Sally to herself on
her way home after the Bible, "this
is a lot nicer than waiting till after
I'm dead and buried before they
get 'em. At least I guess it is."

Then she got her Bible and soon
she was knocking at Aunty Lincoln
Washington Rogers' door.

"Come in, honey. I see you's
comin'," and Nurse Rogers opened
the door.

"Here's my last will and testa-
ment for you, Aunty Lincoln,"
said Sally.

For a moment the old negress
stood speechless, and then were
the strings of her tongue unloosed.

"Bress de Lawd, who knows my
old eye was a-dimming so's I can't
read no mo' de fine print; dis yer
book am lovely. Jus' you hear me
now."

And she read—or recited: "De-
Lawd is my shepherd; I shall not
want," and on through to the last,
"an I will dwell in the house of the
Lawd forebber."

"An yer say this am your last will
and testament. It's de last will,
and de first will. It's de whole
blessed Bible."

Then Sally hurried home and
got her last special gift, and took it
over to Trilly Truffles.

"My last will and testament!"
exclaimed Sally.

"Why, it isn't a Testament! It's
a looking glass," laughed Trilly
rapturously. Then Trilly looked,
and stared and blushed; and then
she excused herself and hurried out
into the kitchen. What a splashing
of water Sally heard, and "Ouch!
ouch! ouch!" for Trilly was combing
her hair.

"It's just as I said," thought

Sally, on her way home. "The
looking glass is just what Trilly
needed. My, but this is nice! Won-
der if I haven't got something else,
so that I can make another will
and testament!"

Cousin Doris' Letters

Dear Cousin Doris,—I was so pleased
to see my first letter in print that I thought
I would write again. I got a lovely book as a prize. Thank you very much for it.

This has been a very dry summer, and
bush fires have been raging for a long time. The ground itself was burning. But a very welcome rain came last week and put them nearly all out for the time, but a dry east wind came up after a while and fanned them up again. It took a lot of rain to make any impression on the ground at all.

We had a very good hay-harvest and
also the grain was good. We have our
both fields of corn cut, bound, and nearly
ready to bring in. We have not got a
corn-binder, but a neighbor man cuts it
for us.

The potatoes are not a very good crop
this year, but what there are of them are
lovely and large. We will not dig ours for
quite a while yet, but when we do we will
have a potato-digger, and it will make
short work of them. I usually help pick
them up but it is lots of fun when there is a
crowd.

School started quite a while ago, but I
do not go as I have not been very well
all summer. I may start to High School at
Christmas, but I'm not sure.

Do many of the cousins like music?
I am very fond of hearing it, but I do not
like to practice. I have taken one term
and may take some more after a while. I
can not play very well or very much.

Some of the Fall Fairs are over now.
I have not been to any yet, but expect
to go to one about seven miles from here.
My brother intends going to Malone Fair.

I guess I will close as my letter is rather
long now.

Wishing your paper every success.
Your cousin, ANNIE COUNTRYMAN.
Bush Glen, Ont.

Dear Cousin Doris,—I received your
book a few days ago. It is a great one. I
am almost done reading it already. Thank
you very much for it. I did not expect
such a nice book at all.

We are having nice weather here now.
The last few days were very warm. There
has been scarcely any frost yet, and the
leaves are only beginning to turn. The
trees are lovely here in the autumn.

The harvest is not finished yet although
most of the grain is cut.

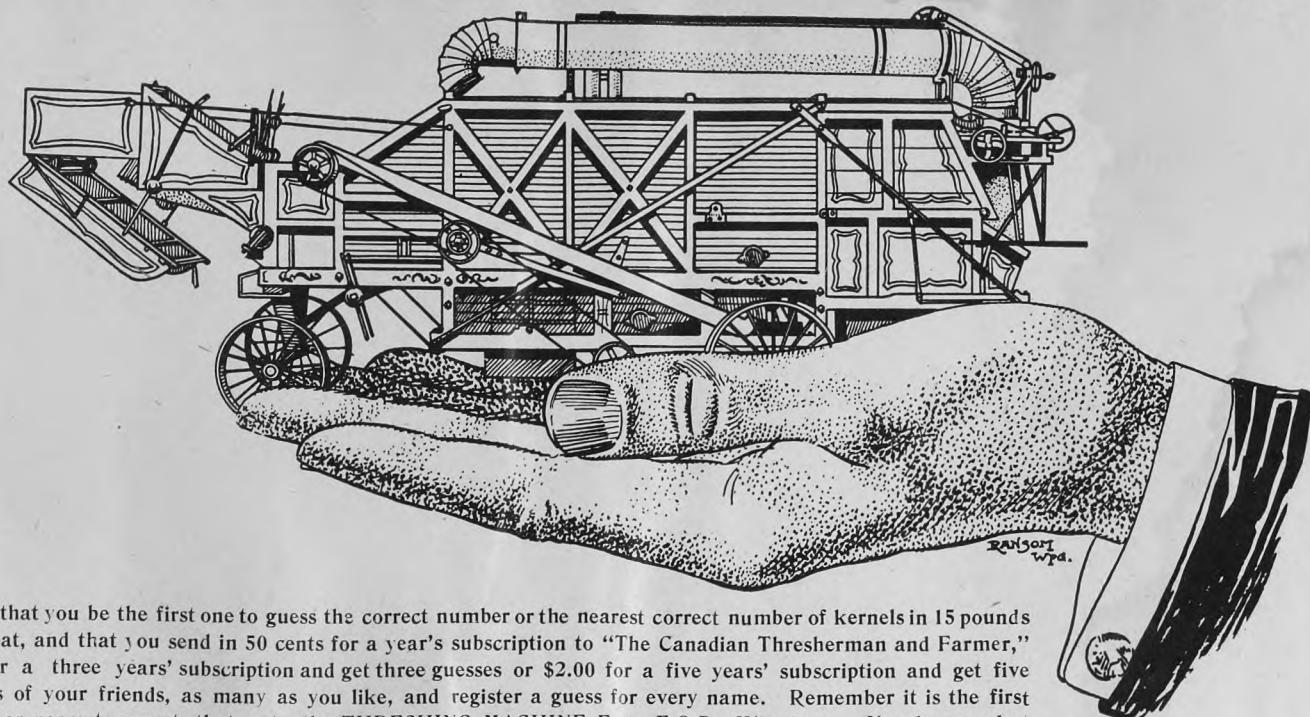
There have been lots of berries here this
summer. We get wild strawberries, rasp-
berries, blueberries and blackberries. Some-
times we go away for raspberries or blue-
berries and take a lunch, and have a kind
of a picnic.

Beach-nuts and hazel-nuts grow in
the woods. I did not get any hazel-nuts
this year, because the squirrels took them
ahead of me. Sometimes when there
is a good crop of hazel-nuts they all dis-
appear in one night. It is thought that
the squirrels take them. There is a very
tough burr on the nuts and they have

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ALL that is required on your part is that you be the first one to guess the correct number or the nearest correct number of kernels in 15 pounds of No. 1 Northern, Red Fife wheat, and that you send in 50 cents for a year's subscription to "The Canadian Thresherman and Farmer," or if you prefer, send in \$1.25 for a three years' subscription and get three guesses or \$2.00 for a five years' subscription and get five guesses. Or send in the subscriptions of your friends, as many as you like, and register a guess for every name. Remember it is the first one who guesses the correct number or nearest correct, that gets the THRESHING MACHINE Free, F.O.B., Winnipeg. You know what "The Canadian Thresherman and Farmer" is. The machine is your own choice.

Ending August 1st, 1909, "THE CANADIAN THRESHERMAN AND FARMER" will carry on a guessing contest, open to everyone in Canada, except residents of Winnipeg. Fifteen pounds of No. 1 Northern Wheat have been obtained, placed in a vessel and sealed, to remain there until the day the contest closes, when it will be taken out and counted by a Board of three Judges, none of whom are in any way connected with "THE CANADIAN THRESHERMAN AND FARMER," or with any Threshing Machine Concern.

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to be put in the ground till it drops off. There are many kinds of wild fowl around here. There are ducks, geese, plover, snipe and partridge. The black duck is a very cunning bird; they have been known to drag themselves over the ground as if their leg was broken if any one came near their nest. The person would try to catch the duck, but the bird would just keep out of his way. After the bird had led him a long way from the nest she would rise up and fly away.

Thanking you again for the nice book you sent me, and hoping to receive one other sometime I remain.

JAMES E. MELLISH.
Victoria Cross, P. E. Island.

takes the paper and every time he brings the paper home I read the letters that the cousins write.

I am staying with my brother-in-law, Will. I have two brothers and six sisters. My oldest brother's name is Joe. He is in Washington.

My father is a store keeper and we live on a farm one and a half miles away. We have eight head of cattle, three head of horses, two pigs and one hundred and sixty hens. I am thirteen years old and am in the third reader. I went to school two and one-half years. We have fine weather now, but it rains. My grand parents came to Alberta a month ago. I was very glad to see them. My cousin Henry came along. Will has a threshing outfit. If my letter is not good enough put it in the basket.

I will close for the first time, for I want to go to the store, VELINA BRUBBSBER. Mayton, Alberta.

Dear Cousin Doris,—I have read so many letters from boys and girls I decided to write also, my father takes the "Canadian Thresherman and Farmer," and I think it a fine paper.

I must tell you of the bad luck we had. A forest fire broke out on the 7th of May and burned us out—two houses, two stables, one granary, one chicken house and 25 chickens, one pig and a milk house and cream separator, about 50,000 feet of lumber, 75 bushels of potatoes and 175 bushels of grain. Our loss amounts to about \$3,000.00. We did not save anything, it all burned—furniture and clothes, a fine blacksmith shop, 3 sleighs and a two seated buggy.

My father and brothers were away trying to save the lumber from burning at the mill. Well I must close, hoping to see my letter in print and wishing your paper success. I am your loving cousin,

MYRTLE S. RIVERS.

Onoway, Alta.

Dear Cousin Doris,—This is my first letter to "The Canadian Thresherman and Farmer." A. F., my brother-in-law,

My father takes your paper, and I like to read the Boy's and Girl's pages, and so to day I thought I would write.

I live thirty-five miles from Regina, which is the capital of Saskatchewan. I go to school every day, and am in the fourth class. Our teacher's name is Miss D. V. Benjafield.

The crops are looking fine around here, but we are not having much rain just now.

We have 11 horses and 6 head of cattle.

I have two hounds. A friend of mine has one. We are thinking of going out hunting wolves this winter. We both have rifles.

I think I will close hoping my letter will escape the waste baskets. I remain.

Your friend, FRITZ DOEGE.
Longlaketon.

Dear Cousin Doris,—This is my first letter to the children's corner. There are eleven in our family. My sister takes the paper. I am ten years old. I am in the second reader. We have two horses. Their names are Colonel and Maggie. We have thirty-five head of cattle. We have one dog, her name is Queen. We have one old cat. His name is Tom. Your cousin, VIVIE E. D. SEWARD.
Edberg, Alta.

Dear Cousin Doris,—I saw my other letter in print. I thought I would write again.

I am interested reading the boys' and girls' letters. Our school started on the 11th of August. Our school is called Wood Lake. We live three miles from it. It is a long way to walk. We live four miles from turtle mountain. It is not a very big mountain. I have three brothers and two sisters. One of them got married and went to B.C. Dear cousin Doris will you put your photo in "The Canadian Thresherman and Farmer." I would like to see your photo at the head of the club. My elder brother got a threshing machine this summer. It is an American Abell. I am ten years old, my birthday is on the 9th of May and I am in the third class. We have 19 horses and 35 head of cattle.

My elder brother takes your paper and likes it fine. When it comes I always turn to cousin Doris' page where the letters are. I am your loving cousin, Adelpha, Man.

VIOLET SCOTT.

Dear Cousin Doris,—This is my first letter to your very interesting page. My father takes "The Canadian Thresherman and Farmer," and we all enjoy reading it very much.

I live in a small town named Wolseley, but we used to live on a farm and we moved to town three years ago. I go to school every day, and I am in grade five, I like going to school very much, but we are having holidays now. We are going to have holidays for six weeks.

We have a cow called Lady and a dog called Jack. Our cow will run after you if she could get a chance and bunt you. The dog is quite a pet, and he won't bite unless he is set.

Well I guess I will say good-bye for this time. Hoping to see my letter in print. I also wish your paper every success,

GLADYS KENNEDY,

Wolseley, Sask.

Dear Cousin Doris,—This is my first letter I have written to your paper, and I hope to see it in print. My brother takes "The Canadian Thresherman and Farmer." I like to read the children's page, so I thought I would write a letter. I am helping papa and my brother put in the grain. We have two colts, and they are both pets. I have a pet lamb and four pairs of pigeons. I am fourteen years old. We live about one mile from town. The town where I live is not very big. There are three stores, two confectionery shops, one barber shop, two real estate offices, one hotel, post office, butcher shop, one drug store, livery stable, a bank, four implement shops, one grist mill and one elevator. I have two brothers, two sisters.

Wishing "The Canadian Thresherman and Farmer" every success, I remain your cousin, ARCHIE V. BONE.
Magrath, Alta.

Dear Cousin Doris,—I received my prize booklet. It is just fine.

My brother has got three bronchos, two of them are pretty wild. They will jump and snort whenever you go near them. One of them—the wildest one—got away one day and my brother had to run after it with the saddle-pony till he caught him. My brother is going to break in his bronchos this winter. He will have quite a time for some bronchos are hard to break in.

I had a garden in this year. It is nice looking now. I have onions, lemons, pumpkins, corn, squash, water melons, and a few peanuts and a nice flower bed. Threshing is going on now. My four brothers are away. They are each with a different machine. One of my brothers is on as foreman on a machine that is threshing just a mile away. I had a cousin that died in Winnipeg this summer. His name was Melbourne J. Johnston. He used to work in the C.N.R. station. Hoping this will escape the waste paper basket, I remain. Your cousin,

T. JOHNSTON.

Edrands P.O., Man.

Dear Cousin Doris,—This is my first letter to "The Canadian Thresherman and Farmer." A. F., my brother-in-law,

"YES, my dear," said Aunt Susan, reminiscingly, "I remember my school days as though 'twas only yesterday. And the spelling matches we used to have! There was old Squire Hepner, who always took a great interest in our school. He was a peculiar kind of man. Folks would call him cranky in these days, I suppose. He was so gruff and sullen that you'd think he'd snap your head off."

"Education was the old man's hobby. He had no learning himself and used to tell us how he felt the need of it. He thought that people could not be educated unless they could spell clean from b-a, ba, to incommunicability in the speller."

"Well, Squire Hepner had heard that the Red Haw district folks were making their boasts that they could outspell ours, and it angered him. His daughter Harriet was the best speller in our school, and they said her father offered her any cow on his place if she'd spell the Red Haw school down."

"One Friday afternoon, the old squire came stamping into the schoolhouse when our school was having a spelling match. He was the director of our district, and the boldest scholar would be mute and meek when he appeared. He had two little jet-black eyes that seemed to see right through you. He could make almost any scholar wriggle in his seat by fastening his eyes upon him."

"The squire was the richest man



Sam Waitely

in Four Mile, but he never gave any money away, and that made it all the more surprising when, just before school let out that night, he got up and in his short, jerky, gruff way, said:

"'You've spelt pretty well this afternoon, scholars, and I'm glad of it, for, to my thinkin', spellin's the most important thing a body can larn. In fact, it stands to reason

A New Year's Spelling Match

BY FRANK H. SWEET.

you've got to be good spellers 'fore you can be good readers or real good in anything. It's all well enough to know how to figger correctly, an' I reckon grammar's well enough, though I never took much stock in it. Geography an' algebra an' history an' all that is good enough in its place, but 'cordin' to my notion spellin' beats 'em all."

"An' now, to encourage you in being good spellers an' to stop the

would give us all the hard words, like 'daguerreotype' and 'phthisic' and 'receipt' and those with silent letters in them, and we would spell them over and over again."

"The offering of that prize set the whole township in a commotion, and little else was thought of or talked about. The Red Haw and Jack Oak districts let it be known that they would try for the prize, and they had some good spellers in



HE STOOD WITHIN A FOOT OF HIS UNCLE HEPNER.

braggin' of some districts not far from here, I'm goin' to make it an object for you to study your spellers like sixty for the next few weeks.

"In six weeks from to-night, an' that will be New Year's eve, we'll have a spellin' match in this house, an' I want it circulated round that any school in this township is free to come an' spell for the prize I'll offer, which is \$25 in gold to the one that spells down everybody."

"Now, take your spellers home with you to-night an' do somethin' else with 'em besides a-chawin' the corners off." And with that the squire made one of his stiff bows to the teacher and walked out.

"I tell you, \$25 was a large sum of money in those days, and when it was known that the prize had been offered there was more studying of our old blue-backed spellers than there had ever been before. We used to take them home every night, and our fathers and mothers

those schools, especially in the Red Haw.

"But none of them had a better record than Harriet Hepner, and they said that in those six weeks she studied her speller night and day. Folks who passed the Hepner house at midnight declared that through the windows from the road they had seen Harriet sitting on a stool up near the fireplace, leaning her head against the wall, and the squire sitting in his old hickory chair, spelling book in one hand and a tallow dip in the other, giving out words to her, and everybody else in bed. No wonder the girl became thin and peaked."

"You see, the squire fairly hated the Red Haw district and about everybody in it. The Red Haw and ours had formerly been one district, and he opposed their being divided, because he owned land in both, and he knew that if they were divided there would be an extra tax for a

new schoolhouse and a new school fund.

"The squire had a sister living in the Red Haw district, but he had not spoken to her for years and would not allow his folks to look at or speak to her or her children."

"The poor woman had, in the first place, married against the squire's wishes. That angered him. Still, he spoke to her when they met, though they did not visit back and forth any."

"Mr. Waitely, the squire's brother-in-law, was the one that first suggested the dividing of the district and did more to bring it about than any other man, which was natural, for the district was so big and the schoolhouse so far off that the Waitely children could not go to school in the winter time."

"But that didn't make the least difference to Squire Hepner. He was furiously angry with Waitely, and on town meeting-day he and Waitely had some dreadful words."

"Of course Mrs. Waitely sided with her husband, and from that day the squire turned from his own kin. He never spoke to them again, not even after Mr. Waitely died. The poor man got caught under a falling tree and was killed, leaving his widow with four children and nothing but a shabby roof over their heads and three or four acres of scrubby land."

"She had a fearfully hard time supporting herself and the children, but the squire never helped her. And, to make matters worse, her



Harriet Hepner

oldest child, little Sam, was a cripple, humpbacked and lame in one leg, so that he had to walk with a crutch. Of course he wasn't any help to his mother on the place, but she was trying to educate him, knowing that he never could do any physical work."

"Well, the spelling bee excitement became more and more in-

(Continued on page 70.)

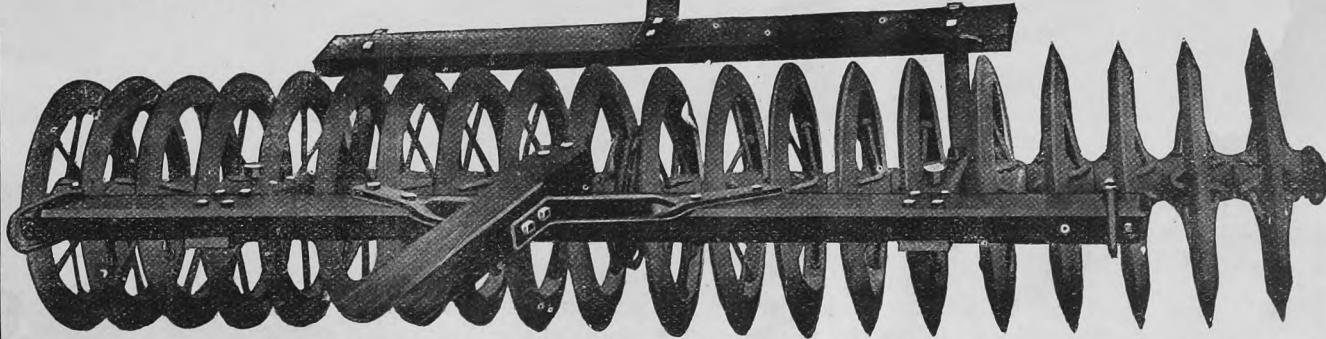
YOU CAN INCREASE YOUR CROP

50 per cent. in 1909

20 Wheels Weight 2200
Width 10ft.

By Using a

BRANDON SUB-SURFACE PACKER

24 Wheels Weight 2560
Width 12ft.

In the IMPROVED BRANDON SUB-SURFACE PACKER we have a tillage tool that should be in the farm equipment of every farmer. Its V shaped wheels or discs penetrate the soil deeper and pack the sub-surface more firmly than any other machine in the world today. It is constructed in two sections, thus enabling it to conform to uneven surfaces and its interchangeable bushings make it a machine that will last the farmer a lifetime. Sub-surface packing is a method of tillage that every farmer in the West should investigate. We can tell you about it if you will but write us.

Address— **THE BRANDON MACHINE WORKS CO., Limited, BRANDON**
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Prices

Siwash Indians as Packers on the
C. P. Railway During its Con-
struction.

(Continued from page 36.)

ments we sent 30 extra men well-armed, along the line to protect the trains. I had instructed that four of the trains should keep together to assist one another in case of an attack by the packers. My prediction proved true.

The second night, while four of the trains were laid up for the night, a party of 12 of the white packers made a raid on the train. They cut the bells from the bell mares and stampeded the mules by shouting and firing off their revolvers and giving war-whoops. Not knowing that extra men had been sent to protect the Indians, they made a raid on the camp, intending to annihilate the Indians. They were met by 10 men who were on guard, who opened fire on the intruders, killing one and wounding three others. So utterly surprised were the attacking party of packers that they at once made a retreat, panic-stricken, leaving their dead companion and the three wounded in the hands of our men. The result of the little brush taught the white packers a lesson, and put a quietus on any further trouble from them. We ascertained the names of all of those who took part in the attack on the Indians, and had them arrested, convicted and sent to the penitentiary for ten years.

The utilization of the Indians as packers proved a success; for one year they continued without a hitch. But as a leopard cannot change his spots, so with an Indian. Firewater is his bane. For one year, Spuzzum Joe, one of the four that I had selected to collect the Indians for the pack trains, and whom I had befriended and trusted, attended to his duties in a straightforward manner, but at last he proved unworthy. After receiving his pay for three months he turned up

missing. When he returned after a week's absence, he was full of fire-water, and unmanageable. An intoxicated Indian is as difficult to manage as a crazy bull. He had acted as boss of one of the best pack trains for a year. In his absence his train was managed and run by another Indian. Spuzzum Joe insisted that he be allowed to take his train, which in his drunken condition I couldn't allow. The next morning after his return to the camp, the train that he had been running as boss, went out. In a short time after the departure of the pack train, word came to me that Spuzzum Joe was up on the trail insisting on taking his train as boss. I immediately mounted my mule and overtook the train some 10 miles out. Joe had the Indian boss cornered, and insisted on taking charge of the train. I tried to reason with him, but it was useless. We overpowered him and bound him hand and foot with lash ropes, and left him on the trail to sober up. After he had remained in his confined condition some four or five hours, I went and released him. I reasoned with him and he promised good behavior. He went to camp, but the next day was missing. I gave the matter no farther thought. The next night after his disappearance I started to go over the trail from my headquarters, which was my usual custom. The night was pitch dark. When about 10 miles from my headquarters I was riding along with the bridle lines over the saddle horn, when my mule suddenly stopped short and snorted. Although it was very dark I discovered an object approaching. Thinking perhaps it was some person in wait to waylay me, I pulled my revolver and challenged the intruder. Without any answer to my challenge the person came up and grabbed my mule by the bridle. Nothing but Divine Providence

prevented me from at once firing my revolver pointblank at the intruder. I again spoke and asked for an explanation. Then a voice in the Chinook language said, "Cum tux big Boston man. Spuzzum Joe shoot him." I at once recognized the voice of a Siwash Indian girl, Rosa, whose mother had done my washing for a long time and whom I had befriended in various ways when her family were in trouble.

In her jargon, the Indian girl informed me that the Siwash, Spuzzum Joe, was up on the trail waiting to kill me; that her mother had sent her to inform me of the fact. My first impression was to continue on and be on the lookout for the Indian. But thinking he would lay in ambush for me, and would get the drop on me, I considered discretion the better part of valor. I went over to the settlement which was near by. Rosa's mother informed me that the Indian, Spuzzum Joe, had been laying around the place all day and that she had overheard him tell some of the Indians that he was going to lay for me on the trail that night and kill me. She had quietly instructed her daughter, Rosa, to go to the place where I usually passed and warn me of Joe's intentions. The girl had been at the place three hours waiting for me to make my appearance. I was certainly indebted to the Indian girl and her mother for my life, for which I reciprocated to the limit. The facts were that the Indian, Spuzzum Joe, was enraged at the manner in which I had handled him. It humiliated him and wounded his pride to such an extent that he was determined to have vengeance by killing me. The next morning when I went over the trail, Spuzzum Joe failed to show up.

Knowing the vindictive nature of the Indian I at once proceeded to prevent a recurrence of the Indian's efforts to raise my scalp.

We had Spuzzum Joe arrested under the laws of British Columbia. After he had been confined in prison for some three months, I took compassion on the Indian. I interceded and had him released on condition that he should leave that part of the country. We sent him to Victoria under guard, and from Victoria to Seattle. And that was the last we heard of Spuzzum Joe.

RECENT CANADIAN PATENTS.

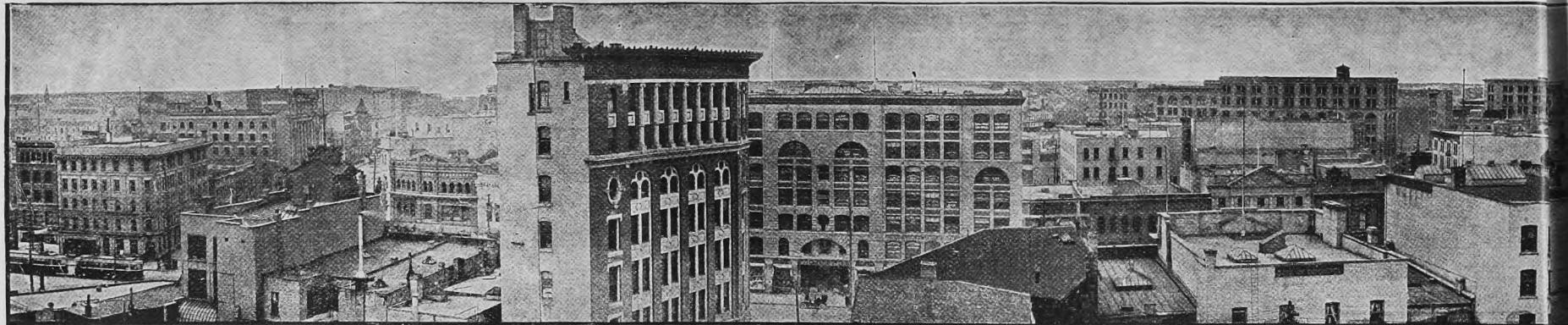
The following list of recently granted Canadian Patents has been submitted to us by FETHERSTONHAUGH & Co., Patent Barristers, Winnipeg, Man.
No. 113,931, to B. W. Carlyle, E. George, Vancouver, B. C., Private Letter Boxes.
No. 113,934, to J. L. Benson, Winnipeg, Manitoba, for Crowns for Teeth.
No. 113,947, to C. A. Meilieke, Hanley, Sask., for Calculating Machinery.
No. 113,973, to P. P. Dick, Didsbury, Alta., for Brush Cutters.
No. 113,974, to D. J. J. Dyson, Winnipeg, Man., for Stock Food.
No. 113,990, to S. Weaver, Vancouver, B. C., for Mail Packing Receptacles.
No. 114,067, to G. E. Roose, Wetaskiwin, Alta., for Machinery for Cutting Brush.
No. 114,074, to J. Sieffert, Winnipegososis, Man., for Potato Planting Machinery.
No. 114,199, to W. L. Reusch, Yorkton, Sask., for Monkey Wrenches.
No. 114,177, to A. Huel, Forget, Sask., for Gang Plows.

The following is a list of Canadian Patents recently issued through the agency of Messrs. Ridout & Maybee, 103 Bay St., Toronto, from whom further particulars may be obtained:

Muir and Muir, Safety Appliance for Elevator Wells.
S. Z. De Ferranti, Spinning, Doubling and Twisting Machines.
R. Ditchfield, Lawn Rake.
Wm. Hamilton, Coin-Freed Pre-Payment Mechanism.
J. E. Rendle, Glass Title.
A. H. Imbert, Treatment of Zinc Ores by Prefusion.
W. H. Williamson, Hose Supporter.
E. E. King, Boot and Shoe Uppers.

There is on an average one wreck every day in the Baltic Sea.

Scientists assure us that the flounder lays no fewer than 7,000,000 eggs in the course of a single year.



1908—BIRD'S EYE VIEW OF THE HEART OF WINNIPEG, TAKEN FROM THE AIR

WINNIPEG

MUNICIPAL

City has an area of 13,990 acres. Population, April 1st (1885), 19,774. Population, April 1st (1902), 48,411. Population, April 1st (1904), 67,262. Population, April 1st (1908), 118,250. City, total assessable property (1902), \$28,615,810. City, total assessable property (1904), \$48,214,950. City, total assessable property (1906), \$80,511,725. City, total assessable property (1908), \$116,400,660. Has rate of taxation (1908), 15 mills. City owns all public parks, its asphalt plant, city quarries, waterworks, and street lighting stems. City has under construction its own Electric Power plant, costing 3½ million dollars. City has 185 miles of water mains, 166 miles of sewers, 377 miles of sidewalks, 300 miles paved and graded streets. City has 675 electric street arc lights, 1,140 fire hydrants, and 132 firemen. City has 9 fire-hall-stations, with 36 fire-fighting outfits, and a 300-lb. high pressure system.

RAILWAYS

Has 22 pairs railway tracks radiating from city. Has the largest individual railway yard in the world. Has Canadian Pacific Railway, Canadian Northern shops, and the Grand Trunk Pacific shops (under construction). Has 120 miles switch siding facilities for manufacturers. Has 3,600 railway employees on pay rolls. Has the finest joint terminal station (under construction) in Canada. Has 70 minute service to lake resorts. Has best shipping facilities in Western Canada. Freight tonnage receipts highest proportional increase in Canada. Electric railway carried 3 million people (1900)—17½ million (1907). Electric railway gross receipts in 1900, \$28,132; in 1907, \$1,722,406. Electric railway operates 140 cars on 60 miles of city tracks, and 44 miles suburban lines. Offers available factory sites with trackage (cheap). Has shops of all three transcontinental railway systems.

MR. F. E. KENASTON, president of American-Abell E. & T. Co., and S. O. Bush, vice-president, were visitors in the city the forepart of December, and while here attended the annual meeting of the above company. ♦

A. LeGresley, manager Burridge-Cooper Co., is at present on a business trip South and East. ♦

I. J. Haug is at present on a business trip to Chicago and Peoria. ♦

N. A. Nellermoe, of Haug Bros. and Nellermoe, is away on his vacation, in the South. ♦

N. P. Thompson, manager Canadian Port Huron Co., is East on a business trip to the home office at Port Huron. ♦

E. A. Cutler, manager Gaar-Scott Co., left the latter part of December, on a business trip to their home office at Richmond, Ind. ♦

Z. K. Carson, manager Canadian Parlin & Orendorff Co., has returned from a trip to their home office in Canton. ♦

Mr. E. Haid, who has been on the Travelling Staff of the Waterloo Mfg. Co., at Regina, Sask., since 1904, paid a pleasant visit to the Office of "THE CANADIAN THRESHERMAN AND FARMER," while in the city recently. Mr. Haid is taking over the Saskatoon territory and will have his future headquarters at Saskatoon.

A new addition to the implement men of Winnipeg, is Mr. J. P. Minhinnick, who has come to take charge of the Frost & Wood branch at this place.

Mr. Minhinnick is an oldtimer in the implement business, having begun his career at Churchbridge, Sask., as a local implement dealer several years ago. Later on he started in as a traveller for Frost & Wood, and in 1901, went to Bran-

position, most thoroughly equipped to handle it. He has spent years with Frost & Wood goods, he is well known to the trade, and in his new and broader field, it is safe to predict that the success he deserves will be his. The best wishes of this magazine go with him. ♦

C. D. Kimble, of Sawyer and Massey Co., Saskatoon, was in the city during the latter part of December. ♦

Mr. E. A. Mott, manager Cockshutt Plow Co., left the latter part of December, on a business trip to the home office in Brantford. ♦

Mr. E. Cahill, of the Winnipeg branch of Wm. Gray & Sons, is at present on a trip East to Chatham and other points arranging for next year's business. ♦

Mr. John Herron, manager Waterloo Mfg. Co., Winnipeg Branch, returned from an extended trip East, the latter part of December. ♦

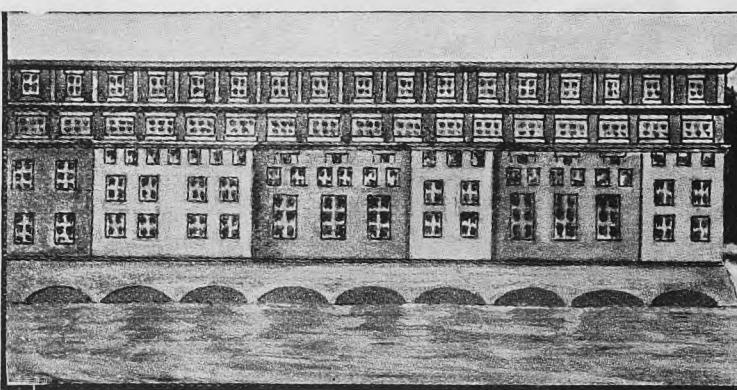
Mr. I. P. Porter, manager of the Hart-Parr Co., in Western Canada, spent the past week or ten days at the home office in Charles City, Ia., taking up matters pertaining to 1909 business, and has just returned more enthusiastic than ever over the business prospects for this coming year.



MR. J. P. MINHINNICK,
Recently transferred to the Management of
the Winnipeg Branch of Frost & Wood Co.
Ltd

don for the same firm as general agent. This position he held for two years and was then transferred to Calgary, as general agent for Alberta and British Columbia. This position he held until the present time, when he was called to Winnipeg, to succeed Mr. J. E. Ruby as manager of the Winnipeg branch.

Mr. Minhinnick comes to his new



The above picture is a general view of the Point du Bois Power Station (under construction) and the 30 ft. Falls of the Winnipeg River. At this point the City of Winnipeg is constructing an Hydraulic Electric Generating plant there transformed and distributed.



WINNIPEG, TAKEN FROM TOP OF NEW GRAIN EXCHANGE BUILDING—1908

MENTION —

E. C. Tecktonius, manager Nichols & Sheppard Co., Regina, left the early part of December on an extended trip through the South and East. ♦

Thos. A. Drummond, general manager of American-Abell E. & T. Co., Toronto, after spending several weeks in the field, has returned to his home in Toronto. Mr. Drummond believes in getting out in the field and going into the working of the goods, thoroughly. ♦

Messrs. W. E. Mawhinney, Jos. Ritchie, Jcs. Ames, T. F. R. Hall, J. Sanderson and W. P. Hartshorne, travellers for the American-Abell Engine & Thresher Co., spent a few days between Xmas and New Year, at their office here, taking up 1909 work with manager Hartshorne. ♦

Mr. Arthur Turner, one of the travellers of The American-Abell Engine & Thresher Co., with headquarters at Dauphin, is confined to his home with typhoid, but it is hoped he will be around again in the near future, as good as ever. ♦

Mr. P. A. Scott and Jas. Timney, with headquarters at Calgary, are now actively working the trade for the American-Abell E. & T. Co. in Southern Alberta, and H. S. Bowden and W. Armstrong are working Northern Alberta trade, with headquarters at Edmonton. ♦

Mr. J. E. Ruby needs no introduction to implement men of Western Canada. For the past twenty years he has been connected with the Frost & Wood Co., starting in at the head office at Smith's Falls. About eighteen years ago, he came to Winnipeg to take charge of the Company's Western business, temporarily, but the result was that he handled the business so successfully that the appointment was made a

its interests, and no one man has done more to further the implement business and put it on a permanent basis than Mr. Ruby. He has been closely identified with the Winnipeg Wholesale Implement Association since its inception, having served the organization in its highest official capacity. Mr. Ruby has been recently transferred to Smith's Falls, as manager of the Ontario branch.

He is a man of sterling character, and one who enjoys the respect and esteem of his fellowmen to a marked degree. That which is Winnipeg's loss will be Smith's Falls' gain. Our best wish for him is, that his future success may be proportionate to that which he has enjoyed in the past. ♦

On Saturday, January 9th, there was celebrated at Brantford, Ontario, the wedding of Miss G. Roberts, of that place, and Mr. George Harold of the Cockshutt Plow Co., Winnipeg. At present writing, few facts are at hand, but this magazine desires to extend congratulations and well wishes to the happy pair. ♦

Mr. H. W. Fleury, of J. Fleury's Sons and Co., Ltd., Aurora, Ontario, was a Winnipeg visitor during the latter part of December. ♦

permanent one and he has held the position since. Under his supervision he has seen the Western business of Frost & Wood grow from a small trade to one of Winnipeg's largest implement concerns with a most up-to-date distributing warehouse and offices.

During his residence in Winnipeg, he has been closely identified with

Mr. A. J. Hartley, of C. J. Hartley Co., Decatur, Illinois, who manufacture a line of Grain Weighers, was in Winnipeg during the latter part of December, looking after the interests of his firm. Mr. Hartley reports a good trade in Western Canada in 1908, and good prospects for 1909. ♦

WINNIPEG

FINANCIAL

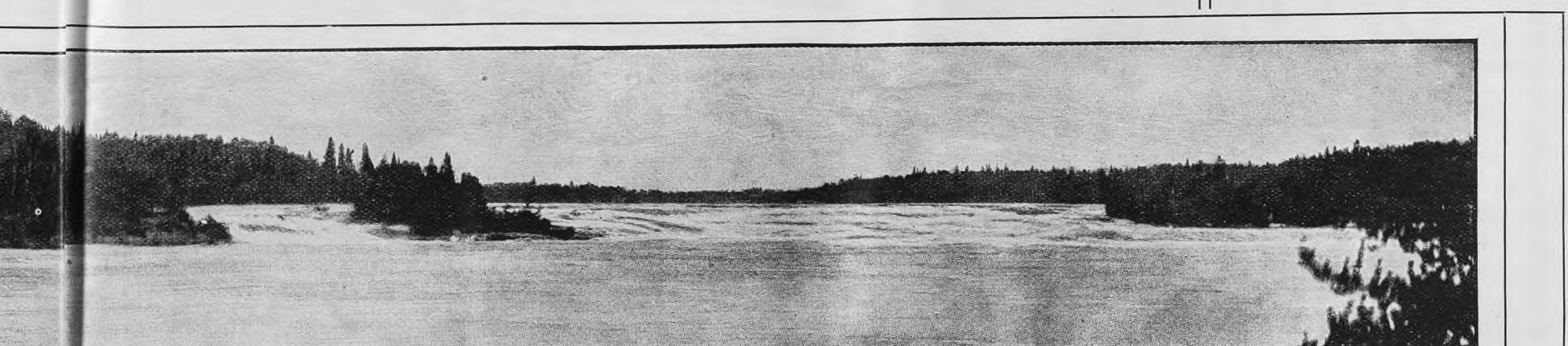
- ¶ Has eighteen chartered banks, operating 41 suburban branches in city.
- ¶ Banks have 487 branches in Western Canada.
- ¶ Bank clearings in 1902 totalled \$188,370,003.
- ¶ Bank clearings in 1907 totalled \$599,667,376.
- ¶ Bank clearings increase greatest of any city (100,000, and over) on Continent, 1907.
- ¶ New buildings erected in past 6 years, \$50,500,000.
- ¶ Post Office paid money orders (1906), \$2,736,171.
- ¶ Custom collections, 1907, amounted to \$4,429,337.
- ¶ Increase in five years manufactured output 120 per cent.
- ¶ Finances the 200,000,000 bushel grain crop annually.

MANUFACTURING

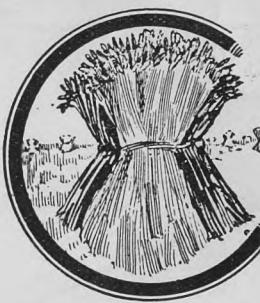
- ¶ Has 144 profitably operating factories.
- ¶ Added 24 new industries in 24 months, ending 1907.
- ¶ Output in manufactures in 1900, \$8,606,248.
- ¶ Output in manufactures in 1905, \$18,983,248.
- ¶ Offers surplus electric power to manufacturers.
- ¶ Is the labor centre of Western Canada.
- ¶ Rolled its first bar-iron (June), 1907.
- ¶ Has large variety natural raw materials tributary to.
- ¶ Shipping facilities best in Western Canada.
- ¶ Has under construction a Municipal Electric Plant of 60,000 H.P. capacity.
- ¶ Has milling capacity tributary to, of 35,000 barrels.

COMMERCIAL

- ¶ Home of 1,900 Commercial Travellers.
- ¶ Wholesale hardware houses most extensive in Canada.
- ¶ Wholesale grocers cover largest territory in Canada.
- ¶ Handles two hundred million bushels of grain crop annually.
- ¶ Wholesale turn-over exceeds \$90,000,000 annually.
- ¶ Inspected 73,097,950 bushels of wheat in 1906, 74,249,465 bushels in 1907.
- ¶ Is the greatest grain market in the British Empire.
- ¶ Had largest cattle exporter in the world in 1906.



Generating Works, with an ultimate capacity of 60,000 H.P. The original installation will have a rated capacity of 20,000 H.P. The output of this station will be transmitted at high tension to Winnipeg, and distributed to consumers.



Winnipeg, Man., Jan. 2, 1909.

SINCE our December number went to you, navigation has closed on the Great Lakes and wheat values in Western Canada went through what is considered the natural reaction resulting from the change from cheap water rates to high rail rates East to tide water. Values throughout December remained high in comparison to the value of this wheat for May delivery. The reasons for this were apparently the large quantities sold for December delivery by local interests which could not be delivered in that month and had to be re-purchased at an increase in cost. We are now down to what is about the correct carrying charge from the present to the first of May. That is, May wheat is selling for about 4c. over the present value, of 1 dollar. Large operators in the United States apparently think that wheat is good property and it is current report that a ring of these men in Chicago now hold some twenty million bushels of wheat for May delivery in the various American markets. This does not necessarily mean a squeeze, but rather points towards this being an investment on their part looking towards the taking of a reasonable profit, that is; a few cents a bushel profit. From this it would appear that the larger interests feel friendly towards wheat and with their continued favor, prices should remain steady and good values be obtainable for wheat markets at any time from now until on towards the harvesting of the new crop.

The local condition is strong, while we have over four million bushels of wheat in store at Ft. William, as against slightly over

two million bushels at this time last year, this difference is more than taken care of through the fact that the visible supply in terminal elevators throughout Canada is but six million bushels against eight and a half millions last year. This taken into consideration with the fact that the majority of the Western Canadian crop has been marketed would seem to point to a very strong situation as regards the remainder of the Canadian crop to be marketed. To counteract this bullish interest, however, reports are coming from the winter wheat States which show the growing crop to be very much improved to what it was a month ago. Flour sales to foreign countries are very slow, in fact some of the North-Western milling interests across the border have closed their plants entirely. The demand for wheat in foreign countries is very low and our Canadian wheat cannot go to export at present prices. Reports from the Argentine now place the exportable surplus of that country at 124 millions from the crop that will be harvested there in the near future. Summing this up, it would appear that our present range of values should be well maintained with but slight fluctuations either way.

The market in oats and barley has been poor, the principal reason for this being the drop in the values of American corn which is in direct competition with our Western feed grains in Eastern Canada. Barley particularly is dead, there being practically no sale for this grain in the Winnipeg market. The visible stocks of oats, both in Canada and the U. S., are considerably above a year ago and this also has a depressing effect on the prices.

Flax seems to be in somewhat the same position as wheat, that is:



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GUARANTEE BONDS - - - - - MONEY TO LOAN

strong interests seem to have taken hold of it, and the result has been a very marked advance in values across the border, with our Canadian Flax following this lead more slowly.

The following are the prices obtainable for the different grains now in store at Ft. William and Port Arthur:—1 Hard .99 $\frac{3}{4}$, 1 Nor. .98 $\frac{3}{4}$, 2 Nor. .95 $\frac{3}{4}$, 3 Nor. .92, No. 4 .87 $\frac{1}{2}$, No. 5 .83, No. 6 .76 $\frac{3}{4}$. Feed, .68, No. 1 A.R. .96 $\frac{1}{2}$, No. 2

A.R. .93 $\frac{1}{2}$, No. 3 A.R. .90 $\frac{1}{2}$. Oats, No. 2 C.W. .36 $\frac{1}{2}$, No. 3 C.W. .34 $\frac{1}{2}$, Extra, No. 1 Feed 35 $\frac{1}{2}$, No. 1 Feed 34 $\frac{1}{2}$, No. 2 Feed .33 $\frac{1}{2}$, Flax, No. 1 N.W. \$1.22, No. 1 Man. \$1.20 and Rej. \$1.12.

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No satisfactory evidence of camels existing in a wild state has ever been produced. They have, in fact, been domesticated from the very earliest times.

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Farmers living near enough to the railroad to load their own grain on cars should not be without our

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If you are not already receiving this, send us your name, post office address, as well as the name of your shipping station. We will then write you regularly, giving you full information direct, regarding the demand existing for the different grades, and the prices being paid for them on the Winnipeg market.

If you feel that these letters would be of value to you write

RANDALL, GEE & MITCHELL

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We will
write you if you
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Cummings Hazlett Company

Grain Commission Merchants

The Grain Exchange

WINNIPEG

On Barton's Reef: A Sailor's Yarn.

(Continued from page 44.)

We hadn't more'n five feet between us, an' I was tremblin' most as much as that big brute when somethin' bobbed up near the reef. We both looked at it, and when I saw it was the lion's old cage floatin' back ag'in I jest made up my mind to jump for it. It was a pretty hefty box an' big enough to carry me.

I edged away toward it, an' when it was as nigh as I thought it would come I waded out in the water an' made a grab for it. By lying slantwise on it, with my feet in the water an' my head about three feet above it, I was tol'rably comfortable, an' I addressed myself to the marooned critter ag'in.

There was a crash an' disturbin' undulashon of the gulf. I saw stars an' sharks an' numerous other onpleasant things. When I got a grip on the floatin' box ag'in I was half drowned, an' that old lion was hangin' for dear life on the other

side of it. He was 'bout as frightened as I was. His paws was within two feet of my hands, an' I could feel his breath fannin' my cheeks, but he warn't for fightin' any more.

We hadn't improved our positions much, for that wabbly old craft warn't built for two. Both of us couldn't keep our balance at once. When the lion was up I was down, an' when I bobbed up above the gulf his head went under.

Then it occurred to that tarnal critter that I was tryin' to duck him, an' he began to hit out at me, snappin' an' snarlin' fit to give one the shakes. After pawin' some of the hide off my hand he got more brave an' tried to climb over on my side. That washisondoin' for the box tipped clean over an' landed both of us in the water. The box floated away an' we had to make a swim for it.

I got there first for I had begun to scent skarks. I dreaded 'em worse'n all the lions in Floridy. I

jest yelled an' jumped up on the box an' tried to hold my feet in the air. I kicked an' splashed to frighten the lion away, but he was game. He came on like a paddlewheel, churnin' the water into a terr'ble foam.

He struck the box ag'in with a bang, an' over we went onet more, turnin' a clean somersault in the water. I went down pretty nigh to the bottom of the gulf an' then bumed up agin the box so hard that I had a headache for a week after.

The lion was there ahead of me, an' he took a turn at fightin' me off. I saw he was gettin' on to the game. The box was a good boat for one, but too small for two. One or t'other had to keep off, an' as possession is half the law the big yellow cuss was goin' to hold on to his advantage. I couldn't get a hold of the box without gettin' a swipe that ripped up a yard of human hide.

I saw somethin' in the water a little way ahead that made matters

worse. It was a shark comin' to see what all the disturbance was 'bout. He was sailin' along like a revenoo cutter after harbor thieves. I knowed then t'was a question of shark or lion.

An' I chose the lion ! If I could knock him off, the shark might be satisfied with him an' leave me alone for a spell. I jest made for that box and put up the fight of my life. It was give an' take, an' no quarter for the vanquished.

I heard a voice call over the water in the captain's drawl. "Hello, Steve ! What you tryin' to do? Don't kill that lion. Part of him belongs to me." I jest twisted roun' mighty scared, for I thought I must be a-dreamin', an' there was Captain Kennelly in the Marthy Ann, sailin' straight down upon us.

"Good Lord, captain !" I says. "I'm nearly tuckered out."

Then I dropped the box an' swam for the boat.

The Canada Carriage Company.

The illustration below shows the plant of the Canada Carriage Co. of Brockville, Ont., where output for Western Canada has been controlled for the last 20 years by the Fairchild Co., and are now

handled by the John Deere Plow Co., of Winnipeg, Man.

The Canada Carriage Co. has the honor of being the pioneer wholesale carriage manufacturers of the Dominion, and are getting well on as Carriage Manufacturers towards their half century mark. The business was originally situated at Gana-

noke, Ont., but owing to the special railway facilities that the Town of Brockville had, the Company moved there in 1892, where they erected large premises, all of which were destroyed by fire on the 5th January, 1905; and next morning—although in the dead of winter—the erection of a new plant was begun, and pressed

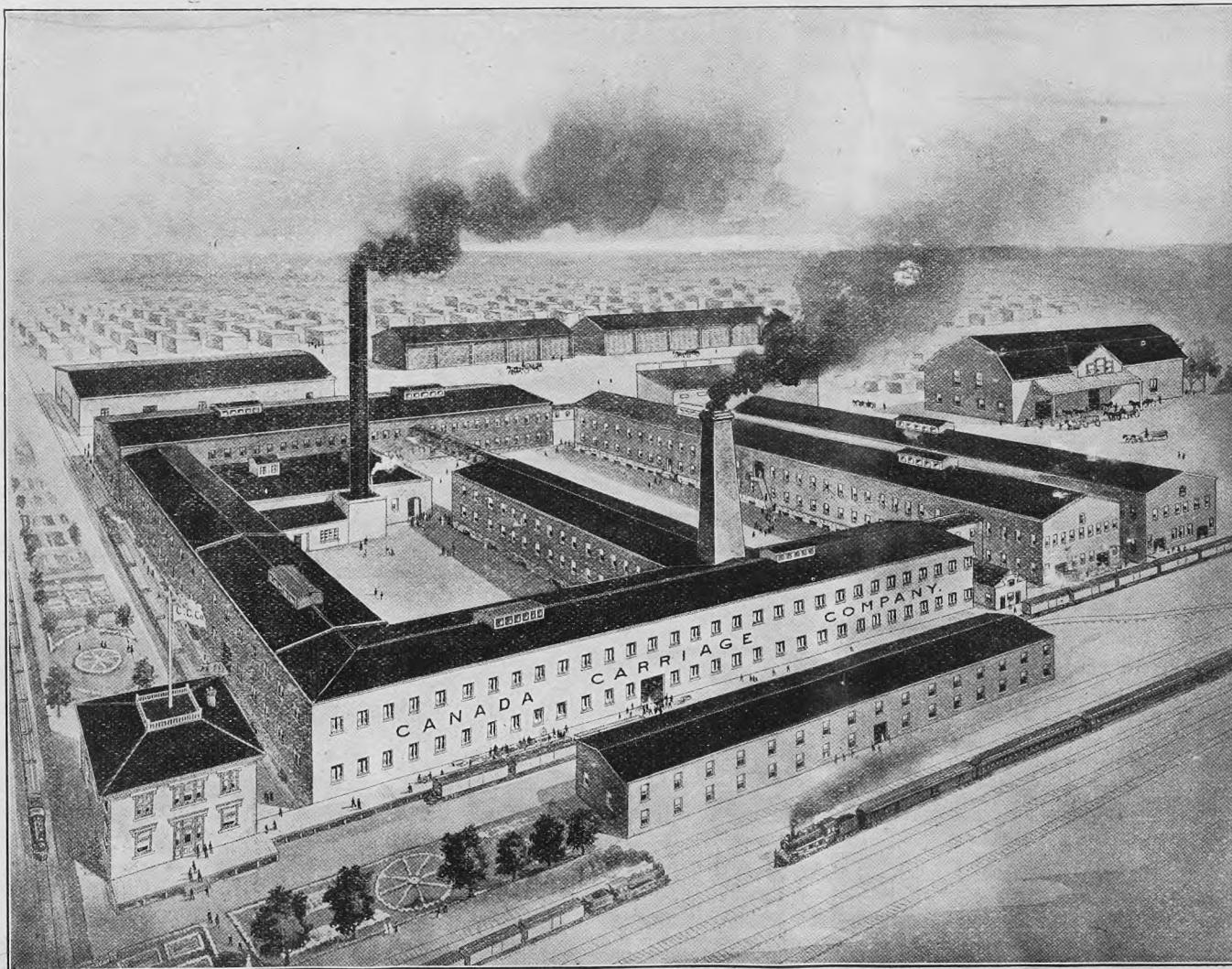
forward until the cut shown on this page was completed, which is built with a view of obviating the possibility of another fire, in which event it could be kept to any one building. These premises are so arranged that every portion of a vehicle handled is moved towards the point of completion, thereby reducing to a minimum the expense of handling.

The favor which this Company's goods have met at the hands of the Trade, has warranted them in going to a great deal of expense to get the best facilities possible, and this has enabled them to keep up their reputation of being one of the largest makers of carriages in the Empire. Their buildings are of mill construction, and comprise 4½ acres of floor space, and this would not nearly accommodate their business if it were not for the fact that the John Deere Plow Co., of Winnipeg, have large extensive warehouses, not only in Winnipeg, but at their other distributing centres in which they are able to receive the goods from the hands of the manufacturer as soon as ready for shipment.

The Management attribute the success that they have made in the Carriage business to the fact that it has had their undivided attention. They make no side lines, but make a study of the requirements of the Canadian Trade for horse drawn vehicles their specialty.

Their 1909 catalogue is out, and will be sent out by express prepaid on application either to the John Deere Plow Co., of Winnipeg, or the Canada Carriage Co., of Brockville, Ont. It is acknowledged to be one of the finest ever issued by any Carriage Concern, and every dealer should have one. They are offering more improvements this year to the Trade than ever before.

Their line is a very extensive one including Victorias, Traps, Bikes, Buggies, Surreys, Democrats, Carts and Sleighs, and they claim for their product more selling points for the dealer, and more wearing features for the users than any other vehicle on the market.





What is a Cream Separator.

The invention and perfection of the centrifugal separator has been the chief factor in the making of the modern dairy. By its greater efficiency it has prevented otherwise unavoidable losses, and by its great economy of labor it has rendered possible the development of a profitable industry in many localities where it would have been otherwise impossible.

Centrifugal force as applied to cream separation is simply another method of using the natural force of gravity. In the case of gravity, the milk is acted upon when at rest but in the case of centrifugal force it is acted upon under motion. In the case of centrifugal force the amount of force generated is so much greater than the force of gravity that the work is done in a more rapid manner, and consequently at a saving of time and

labor. In the case of gravity the force acts in a vertical position, but in the case of centrifugal force, it is horizontal.

As early as 1859, Prof. Fuchs, of Carlsruhe, Germany, suggested a method of bringing butter fat quickly to the surface of the milk by swinging the tubes holding samples of the milk. In 1864 the first centrifugal separator was evolved. It consisted of a device whereby buckets were suspended upon the ends of arms, which revolved rapidly around a center axis. After a short time the butter fat was found on the surface of the milk and was removed in much the same manner as in the old gravity systems. The first separating device might be called a revolving bucket separator. In 1877 these bucket separators were so improved that they accomplished continuous instead of intermittent separation.

In 1877 a new hollow-bowl type

of separator was put upon the market, which closely resembled the recent type of hollow-bowl machine. This machine, however, was only intermittent in its work, inasmuch as the inventors, Lafeldt and Lentz, were unable to provide outlets for the milk and cream which would permit continuous separation. It was necessary to stop at frequent intervals in order to remove the cream and add new milk. This intermittent hollow-bowl did not revolve at a very high rate of speed, and, consequently, had only a limited capacity.

During that year, 1877, the first practical centrifugal creamery was established at Kiel, Germany, which is evidence that, even in its then crude state, the centrifugal separator furnished a method of skimming far in advance of prevailing methods. The saving in time, labor and butter fat which this early intermittent hollow-bowl separator effected was deemed of enough importance to warrant the establishment of a creamery.

The year 1879 was the year of great advancement in separator construction. The intermittent hollow-bowl separators of 1877 were materially improved by the addition of milk and cream outlets, and the bowl was so constructed that a continuous flow of new milk could be supplied. These continuous hollow-bowl separators made their appearance during that year first in Sweden and Denmark. Denmark

leads the world in dairying; Sweden, likewise, has given much attention to the development of this industry. The invention was brought to America about the same time, 1879, but was not generally adopted until some years later.

The continuous hollow-bowl separator was a great improvement over the intermittent bowl, and of course far in advance of the bucket type. This new machine enabled a dairyman to separate immediately after milking, and it returned a larger yield of butter fat than any of the old methods.

Baron Bechtel'sheim, in 1890, discovered that if certain contrivances were placed within the separating bowl, thorough separation would result. This invention was immediately purchased by a well-known Swedish firm, who have used it with excellent success. The purpose of this bowl device was to so separate the milk in the bowl that centrifugal force could act with greater rapidity and more certainty. It is readily apparent that the milk in a separator bowl must divide into three zones—unseparated milk, cream, and skimmel milk. It is likewise apparent that any device within the bowl which would prevent the intermingling of these zones during the process of separation would increase the bowl's efficiency and capacity.

This is the purpose of the interior bowl devices which at the present day have been so highly developed

Only ONE BEST Separator—Tubular

Not because it's in a class alone, is the Tubular best; but because it's best it's in a class alone.

All other separators are built with top-heavy, complex-contents, supported bowls—hard to turn, difficult to clean, wasteful of oil and not as clean skimmers as the Tubular.

TESTS PROVE THESE CONDITIONS

Not because it has the largest factory in the world is the Tubular foremost, but because the world's largest demand is for Tubulars the largest factory has grown.

All the other kinds of separators have "bucket bowls," supported from beneath. They are quite similar in difficult turning, heavy weight to move, oil waste, inviting repairs, tedious cleaning. The world don't want so many of these kinds as it wants of the best.

COMPARISONS PROVE THESE CONDITIONS

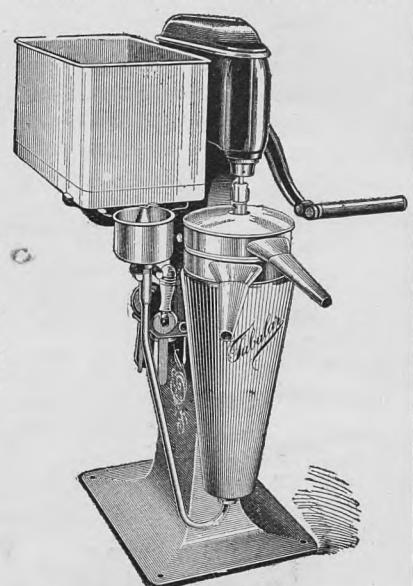
The Tubular is a newer development in separators than "bucket bowls," but a new machine never drove out an older device unless the new was better.

Because the Tubular suspended bowl, bottom-feed separator is better than the "bucket bowls," supported from underneath, top-heavy and unsteady, top-feed with counter currents of milk impeding separation, is the reason why the Tubular has come to the front, and the "bucket bowls" are "have-beens."

EXPERIENCE PROVES THESE FACTS

There are a multitude of inferior separators, but only ONE BEST

Dealers handle all Tubulars, and the best machine for dairymen is the best for dealers to handle. Write for contract and territory.



THE SHARPLES SEPARATOR COMPANY WEST CHESTER, PENNA.

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They aid separation and greatly increase the capacity and efficiency of the machine over the hollow-bowl type.

In 1887 a patent was granted LeFeldt and Lentsch for a machine to separate milk by centrifugal force. The first centrifugal cream separator consisted merely of a series of buckets hung upon arms swinging from a central axis. When the machine was at rest the arms assumed a vertical position but in motion they were thrown out horizontal from the arms. The milk was placed in these buckets, the machine set in motion until the milk was separated from the skim milk, and when the machine was allowed to come to a standstill the buckets assumed a vertical position and the cream was removed from the top in the same way that it is skimmed from any other vessel. From this was evolved a machine that consisted of a revolving bowl or drum, in which the separation takes place, an arrangement for removing the skimmed milk and cream without stopping the machine, thus making the separation continuous.

Since that time the cream separator has gone through many stages of improvement, and many different styles of bowls have been put into use. There is the elliptical bowl, the tubular bowl, the hollow bowl filled with patty tins, and all sorts of ingenious contrivances for the separation of the milk from the cream, but the principle in all of them remains the same. It is simply a matter of mechanical exertion in the case of each. In the main, the essential parts of a separator are: the bowl with or without integral arrangements, an outlet for skimmed milk, an outlet for cream, an inflow for the whole milk, and the proper mechanical means for revolving the bowl. Usually the bowl is driven in an upright position, but this is not absolutely necessary, and there are separators in which the bowl is driven in a horizontal position, and in the greater number of the machines the walls of the bowl are cylindrical.

The action of the force of gravity is the principle upon which all separation is based. The fat globules in milk are lighter than the milk serum in which they are contained. Consequently in the course of time gravity will cause the heavier particles to go to the bottom and the lighter particles of butter fat to rise to the surface.

It is the incomplete action of this force of gravity, and the length of time required for its operation, which make old methods of separation inefficient and undesirable. These systems, too, produce poor results—are wasteful, yield product of poor quality, and necessitate extreme care and much handling.

How to make gravity act with greater force and more quickly, is the problem which the centrifugal separator solved. In the water-dilution system, gravity is assisted

DE LAVAL SEPARATORS

and others have one thing in common—both are sold on De Laval merits. One because it ACTUALLY POSSESSES these, and others, because the uninformed sometimes THINK they do. The difference is all that is possible between "knowing" and "guessing."

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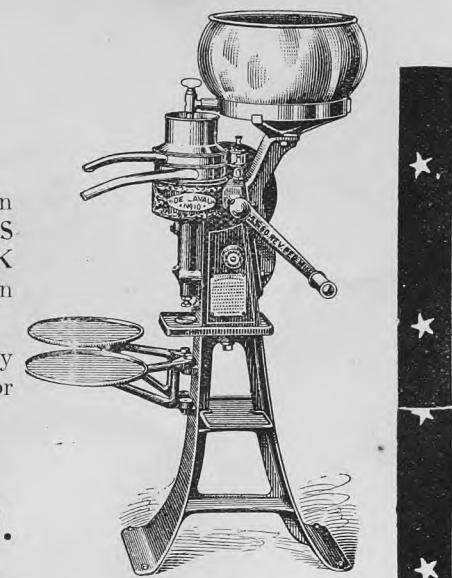
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The DE LAVAL SEPARATOR CO.

Montreal

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by the addition of water, which permits the force to act in a comparatively short time. The quality of the product, however, is objectionable.

In centrifugal separation, gravity is produced by artificial methods and acts horizontally instead of vertically.

If a ball is put on the end of a string and whirled around the hand in a circle, there is a pull exerted through the string as if the ball were trying to get away. This is centrifugal force and is the principle upon which the centrifugal Separator works.

The process is somewhat as follows, regardless of the make of machine: The milk flows into the bowl, and being met by the centrifugal force therein, is forced to the extreme outer edge. As the milk continues to flow in, the bowl begins to fill from the outside towards the center, the centrifugal force acting upon those parts of the milk having the most specific gravity. They are thrown to the extreme outside and the fat globules of cream being of lighter weight with whatever may adhere to them, are forced towards the center. Connected with the extreme outer edge of the bowl are one or more tubes which bending inwards along the side of the bowl find an opening near the center. These are the outlets for the skimmed milk. From the extreme center of the bowl also leading to the outside is the cream outlet.

When the bowl becomes filled with milk, the centrifugal pressure will force out through the skimmed milk outlets, the milk nearest the outlets of the bowl. These outlets are made of such size in comparison of the size of the bowl, the speed of the machine, and the size of the inflow tube that they have a rapidity of discharging the milk from four-tenths to nine-tenths as fast as it runs in. The remaining contents of the bowl are then forced

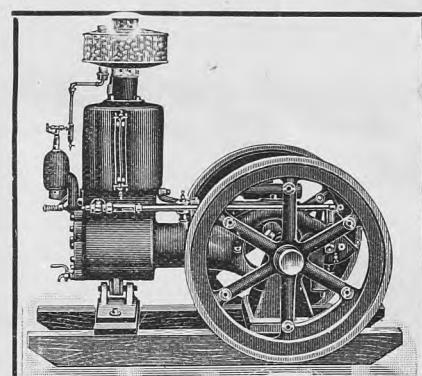
towards the center and finally through the cream outlet. In this way the milk is divided into two portions, one the larger, delivered from the extreme outer portion of the bowl consisting of skimmed milk, and the other the smaller, escaping from the center of the bowl, the cream. There is a third portion also usually accompanying centrifugal separation.

There are many things that affect the working of a cream separator. Among these might be mentioned the amount of centrifugal force, the rate at which the milk flows into the bowl, the physical condition of the milk, and the temperature of the milk. The amount of centrifugal force depends upon the size of the bowl and the number of revolutions per minute. The rate of inflow affects the separation in that separation itself is more complete the longer the milk is subjected to centrifugal force. It is therefore not advisable to open up any machine at the first start to its full capacity, but rather wait until the machine is running steadily, and at the full number of revolutions per minute.

The temperature of the milk has a great deal to do with the separation as it affects the fluidity of the fat globules and their ease of motion on the other particles of the milk. The warmer the milk the more easily it is separated. A temperature of 76 to 98 degrees Fahr., is the one commonly employed. It is very desirable that separation take place at as low a temperature as possible because of its effect on the butter, and we therefore speak of a machine that will separate at a low temperature as being the best machine. The physical condition of the milk also has a great deal to do with it, as if the milk becomes too viscous, or if the fat globules are very small, or if for some reason or other part of the casein has coagulated, it will be found that the separator will not do its work as it should. It is

therefore well to consider the physical character of the milk as much as possible in order that one may govern the action of the separator accordingly. Everything also being equal, it might be said that that separator is best which will separate at the lowest temperature and at the least number of revolutions per minute.

This Article will be continued in our February issue.



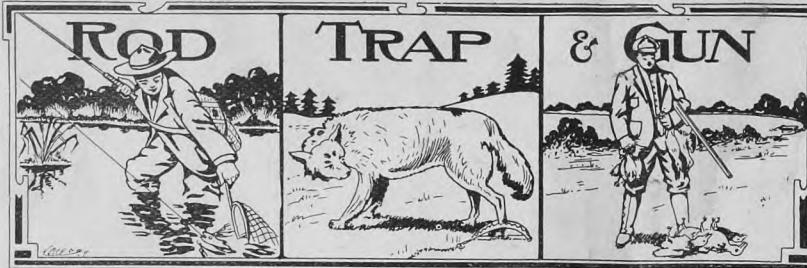
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My First Fox Hunt.

IT was in the fall of 1904, along about the middle of December, that two trappers and hunters, by the name of Shack, were spearing muskrats around a little lake, and as they were going along over the smooth, clear ice, looking for rats, they came to a real heavy bunch of rushes, and to their great surprise out jumped a large grey fox and started straight across the lake.

Well, that was the first we knew that there was a fox in our neighborhood, and as that was the first one seen for a number of years, it caused quite an excitement. I was only 15 years old, but every drop of blood that is in my veins is hunting blood. You all know, you who love the chase, and when a boy you had never killed anything larger than a rabbit or a ground hog, and then to hear of a fox jumping up right on your own farm, it would make all that good blood tingle in your veins. It did me at least.

Well, I could hardly wait until we had a fall of snow, but by and by the long looked-for came, about six inches of good, damp snow, just the right kind for good tracking. We had to do all our tracking ourselves, for we had no fox hounds. One day this snow began to fall my mother went to town and got me a great number of shells loaded with a soft shot, but I was satisfied with them.

Well, next morning found me out over in the hills before daylight. There I met my nephew and one of his other uncles and a cousin of theirs. Well, this did not just suit me for I would rather hunt alone, but they were after the fox and so was I, so of course I had to go with them. We had not gone far when sure enough there we saw where evidently Reynard had made his circle, and as it had snowed quite late in the night it was very easy to follow his last circle, for he had made two that night. Now away we go in the chase down around Baker's field, now he goes up in Bower's woods, here we see where he has caught a pheasant and sat on a stump to eat his early breakfast. On he goes again, back in Baker's wood, out across the old Indian Trail, over in Miller's field. This field is one large sand hill and here the fox went up to a large hole and went in, so we do not know whether he came out of this hole and went back in or whether he went in and came out.

Well, we had lots of fun around that hole. One of the old men was

a Dutchman, and he surely did make us laugh. He would get down, smell in the hole and say, "boys, I will bet my old cap dat dat fox is in dat hole." Well, the old man took another smell and decided that he was sure in the hole, so we started for home to get digging tools, but while on the way we had to go around a small cat swamp and when about half around, we saw where he jumped out of the swamp just fresh. So this settled the hole question, and when we came to find out the truth, we learned he had been jumped about three miles south of us. Well, right here the two old men planned to use we two boys for dogs. We had two dogs with us, the one that run the fox on the ice and a little black shepherd that belonged to me, but they were just good to follow along behind.

When we got within about a quarter of a mile of the woods, we heard some one halloo. We looked back in the direction we had come and saw about twenty men and boys coming. Then I guess we run some. We did not want to mix in with a gang like that. We got in the woods and were not bothered. Here was where old Reynard showed some of his foxiness. There had been a man hauling wood with a sled that morning, and that old fellow would walk right in that sled track, then when he left it, he jumped away off to one side. He was getting quite tired by this time, so he did not go far until he jumped upon a stump and laid down to rest awhile, but poor fellow, little did he think as he lay there resting in that beautiful wooded dale, surrounded by the most beautiful of overhanging branches, laden with fresh fallen snow, that the end of his trials had come, for as we were tramping along I looked ahead and saw him lying upon this stump. I whispered to Joe to keep his old dog back and keep still. He did so, then I crawled around until I had a big tree between me and the fox.

I got up to this tree all O.K. and raised up on my left hand side of the tree, not thinking that I would have to step out in plain view to shoot. Well, the thought came to me before I did it, so I just changed my position to the other side, and just as I raised my gun to fire, he heard me and raised upon his front feet, and just then I touched the trigger and the chase was ended, for he did not make more than three jumps until my little dog had him, but the fight was all out of him. This ended my first and last fox hunt.

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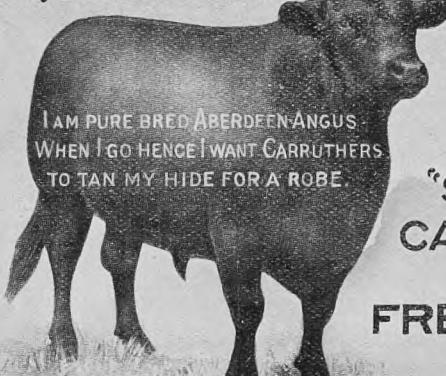
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Facts Worth Knowing.

AYEAR ago cow-hides were worth in market, 4 1/2 to 5 cents for green or frozen, 5 1/2 to 6 cents for green, salt-cured. Now the same class of hides bring 10 to 11 cents. Just about double. It is due to restored confidence. We learn from good authorities that in many places hides are being sold to the country merchants and butchers at about last year's prices. They do not inform the farmer that prices have gone up amazingly high.

Furs have also gone up very high.

Do our readers keep posted, or are they like others selling at much less than their value?

It is a simple matter to ship hides and furs. We have reputable firms advertising with us. It is simple justice to us and to them and a big advantage to yourself to ship to them; for what would you get if you wholly depended on prices offered in the country. It is the same with buying goods. It is the mail order houses that compel the country merchants to sell even as low as they do. You owe them a debt of gratitude for that.

We are in receipt of an 8 page circular and pink folder from the N. W. Hide and Fur Co. They give so much valuable information and instructions with illustrations on how to take off hides and furs so as to bring the highest market prices, that every one of our readers ought to receive them; also the gun and trap catalog.

This firm is old and perfectly reliable to ship to or buy of. In writing to them for price list, or gun and trap catalog, mention this paper.

is trapped in your neighborhood.

They have prepared for the guidance of trappers a particularly valuable Trapper's Guide. This year's edition is so large that they have authorized us to notify every reader to send for this Trapper's Guide and get it free. Even the postage is paid. Every reader is also invited to write for the latest price-list, which shows just what the market offers on every kind of fur. And Funsten Bros. & Co. will also send free tags, shipping lists and complete instructions as to how to deal with them by mail and get the best prices for your furs. Almost every kind of fur is in big demand, and now, of course, is the height of the trapping season. When you write mention "The Canadian Thresherman and Farmer," and your request will receive prompt attention. What you receive will prove very interesting reading. Address Funsten Bros. & Co., 304 Elm St., St. Louis, Mo.

The Long Ago.

Never is the old sportsman in such a good humor as when with closed eyes he looks back to the days of his early youth, and over the scenes of his first forays afield and a stream. With the vividness of yesterday he sees a boy of thirteen, wide awake and alert, but too full of bounding life for much caution or deliberation, walking down the old road towards the old woods, a road then full of meanderings and which led through the best hickory-nut patch in all the neighborhood.

Ah's me! goodly tires have grown up from saplings that the fastidious wood-chopper then scorned, and the twist and turns in the old road are vagrant and purposeless since that blessed October day. Beaches, whose flat branches are shelves of old gold; maples turned to involucres of topaz and crimson by the same alchemy of early frost, and tall oaks, pyramids of bronze and russet, shadows the leaf-strewn forest floor and the prostrate trunks and rotting stumps.

How joyous that urchin in the freedom of the woods; proud as a king with that old bored-out single barrel musket over his shoulder, roaming eagerly about with much undue sound among the crinkling leaves and snappy twigs, scanning with quick glances the branches of hickory and elm, and bordering thickets, imagining himself a Simon Kenton or Daniel Boone, looking for Indians in the primeval wilderness.

Under his breath he tells the scarlet-headed woodpeckers, the golden-winged flickers and noisy jays what they might expect were he not in pursuit of nobler and grander game.

Suddenly a rustling in the dry leaves, and the "chir-ack!" of a gray squirrel startles him and he



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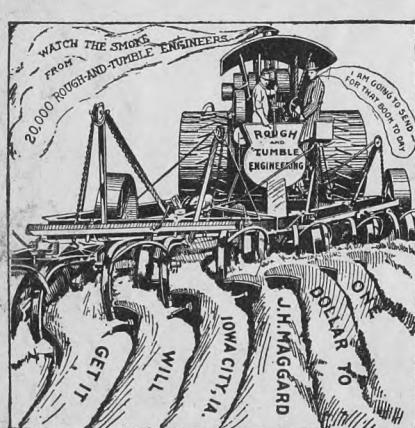
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catches a glimpse of the rapidly scampering streak of lavender, that on the instant bounds up the side of a big white oak and whisks around on the opposite side.

Impelled by the instinct inherited from a sport-loving father, he throws the old smooth-bore to his shoulder and without aim, but in the direction of the vanishing wisp of grey, bangs away. At the same time he is humiliated at the impulsive haste that fooled him into wasting a charge of precious powder and shot against the unimpressionable drab bark of the big oak, but he congratulates himself that he is the sole witness of the scene.

As he hammers down the paper wadding over the powder in reloading, the ring of the iron ramrod as it rebounds almost entirely out of the barrel, startles the squirrel from his temporary haven in the oak's crotch and out the long limb he scrambles, then with the bound of a rubber ball launches out into space for a pendant branch of an old elm near by. He catches the flimsy twigs with his four claws, hangs swingingly, uncertainly for a second, pulls himself up, regains his equilibrium and scurries on down toward the trunk and, with an exultant and defiant "chir-r-r-ruk," pops into an old yellowhammer's hole!

The urchin's heart beats tumultuously, then he sighs, finishing his loading and strides forward again.

But hark! What is that? Above the click and rattle of falling leaves and the querulous clacking of a pair of flickers bobbing at each other on an old snag hard by, comes a low "trit! trit! trit!" from some low hazel brush in front. The lad has heard that thrilling note before and well he knows what it is that makes it, and making ready with the cumbersome smooth-bore, he crouches and softly and timorously advances.

Burr-r-r-r-r!

An old cock grouse—"pheasant," he called it—bursts from the bright baldric of hickory leaves and yellow ferns and in thunderous flight cleaves the crisp air up and out and through the obstructing branches that canopy the scene.

Quickly and wary as the old grouse is the boy is not to get left, and again that long rust-colored tube protrudes out from his right shoulder, there is a crash that lifts the chickadees in a cloud from out the chick grass, a swirl of smoke, and another load of precious powder and shot has been thrown away!

But what was that? As if in answer to the shock of the old musket had given the earth, woods, and atmosphere, there was a thump on the ground ahead, a fluttering among the leaves, and the boy leaps forward, and almost in alarm, yet with a joy his little heart never felt before, he sees a big rosewood colored bird, the old cock pheasant, faintly flapping his black barred wings and

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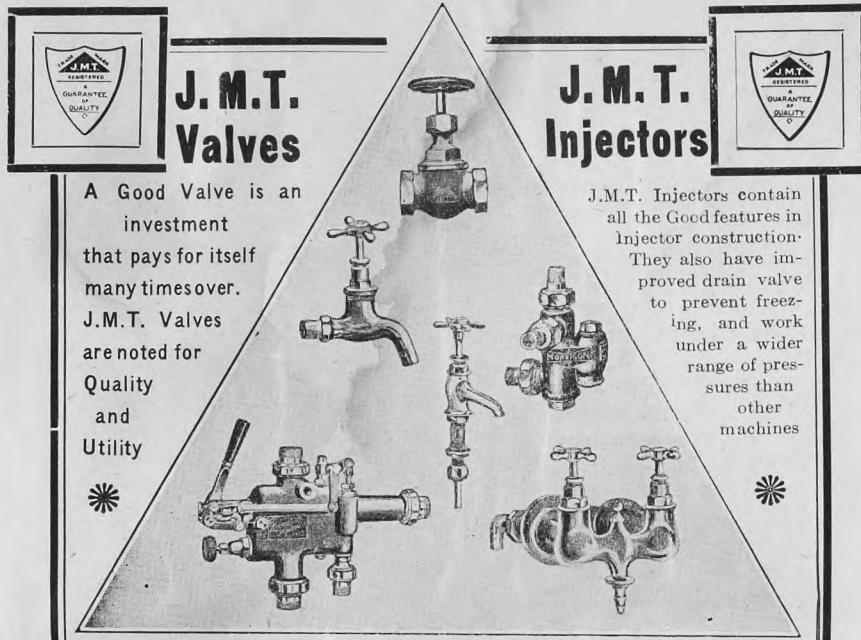
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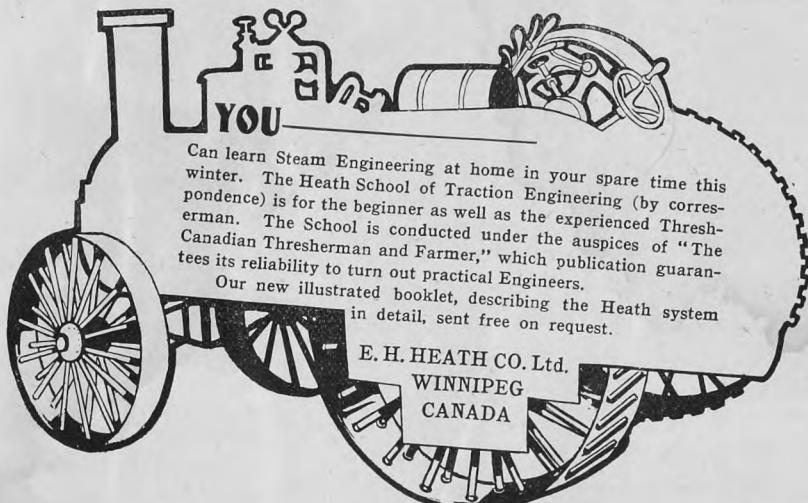
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128

gasping out his last second of life at his feet.

He cannot assure himself that it is not all a dream that will vanish with the next whiff of air, till he has the old cock by the legs and is whirling it round and round before his bulging eyes in ecstasy and he grows faint as he realizes that it is all true and real.

Was there ever such a shot made before? Was there ever a grouse as big and plump and as bright feathered?

And the old dreamer sadly smiles and to himself says: "No, no, there never was, nor never again will be, such a shot or such a bird!"—Sandy Griswold.

Some Items of the Annual U.S. Fire Bill.

Here are a few of the facts from "Burnt Money," Samuel Hopkins Adams' amazing indictment of American fire waste, in the January 'Everybody's':

"In ten years we have had a million fires in this country—an average of 100,000 a year.

"Our fires cost us \$600,000,000 a year.

"Berlin and Chicago are about of a size. Berlin pays its fire department \$312,000 a year, and sees \$169,000 go up in smoke. Chicago's departmental bill is \$3,087,505; its bill for fire loss runs to \$5,000,000 annually.

"Yearly we pay in to the fire insurance companies some \$195,000,000. Except in a catastrophic year like 1906, where a convulsion of nature upsets all calculations, we receive back about \$95,000,000 leaving a comfortable little margin of \$100,000,000 as profit and the cost of doing business.

"Fire rates in the United States are twelve times heavier than in Great Britain and twenty times heavier than Italy. On the average we pay too much for insurance, even on the basis of our highly inflammable communities.

"There are some 11,600,000 buildings in this country, valued at \$14,600,000,000. About 8,000 of these are fireproof, if that elastic term be charitably stretched to cover a multitude of sins. The other 11,592,000 are at the mercy of a defective flue, a fire in the adjoining edifice, or the high financier with the insurance policy in his breast-pocket and the kerosene can in his strong right hand."

A TRAVELLER passing through the Broad Top Mountain district in northern Bedford County, Pennsylvania, last summer, came across a lad of sixteen cultivating a patch of miserable potatoes. He remarked upon their unpromising appearance and expressed pity for anyone that had to dig a living out of such soil.

"I don't need no pity," said the boy resentfully.

The traveller hastened to soothe his wounded pride. But in the offended tone of one who has been misjudged, the boy added: "I ain't as poor as you think. I'm only workin' here. I don't own this place."

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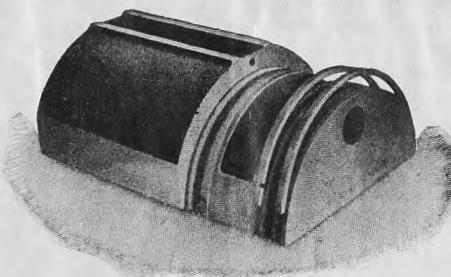
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It contains the opinions of mechanical writers.

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Our warranty provides that the valve will increase the power of your traction engine from 18 to 30 per cent. The testimonials in our catalogue say that this is only a part of the benefits to be derived from the use of the Gould Balance Valve.

Our customers write us that they would not take it out for three times the price if they could not get another one.

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Four years' use in the field has shown no perceptible wear, thus demonstrating that the valve will last as long as the engine.

G. A. Bowles, Jamestown, Ohio, says:—"The valve, in two years' use, shows no perceptible wear, and for this reason I think that the Balance Valve will outwear the common slide valve."

O. F. Hall, New Murdock, Kansas, says:—"I bought the valve from you for my 20 H.P. Advance engine, two years ago, and it is as good to-day as it was then."

A. W. Hiatt, East Peru, Iowa, says:—"As far as real wear is concerned, they will last one hundred years' steady use."

John Moy, Mondovi, Wis., says:—"In regard to durability, our 20 H.P. Case engine has worked in sawing and threshing, 227 days. I took the cover off from valve to examine the wear. You can yet see the fine cuts of the machine on valve seat and cover, so little is the wear. I think the Gould Balance Valve will last longer than the engine or boiler."

Nelson & Nicholson, Dolliver, Iowa, say:—"We have used the Gould Balance Valve for three years without the slightest wear."

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WINNIPEG BRANCH: N. G. LESLIE, Manager

A New Year's Spelling Match.

(Continued from page 58.)

tense as the time drew near, and when New Year's eve at last came, the old Four Mile schoolhouse was a sight to see.

"The night was one of the coldest I ever remember. The stars shone like bright lamps in the sky. The sleighing was good and the air sharp enough to stir the blood and, if possible, still more to stimulate the boys and girls. A lot of the boys had borrowed a pair of sled runners and put a big wagon on them. Then plenty of straw was put in the box, and about twenty of us boys and girls piled in, with lots of quilts and buffalo robes and warm shawls.

"I had my first beau that night. His name was Azrael Whitehead, and of all awkward boys he was the awkwardest. I think I was the first girl he had ever asked to go with him. Anyhow, I know he fell flat on his back trying to help me out of the sled, and he let me go head first into a snow bank.

"I remember that his handkerchief was wet with cinnamon drops and that he gave me a handful of peppermint and cloves. I remember, too, how we all of us went up and down hill singing and laughing at the top of our voices. We made the old woods and the valleys ring. Yes, and the sled upset, too, and we were all thrown into a ditch. The edge of the wagon bow caught my beau's big feet under it, and I thought I should cry from mortification when he lay down and actually bawled and sniffled. I was so put out about it that I wouldn't sit by him after we got into the sled or speak to him afterward.

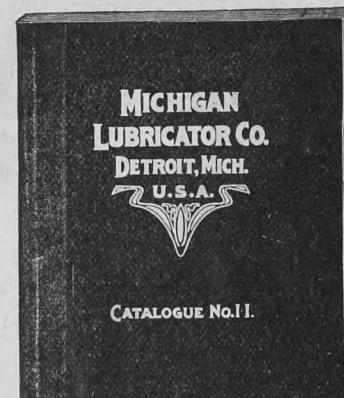
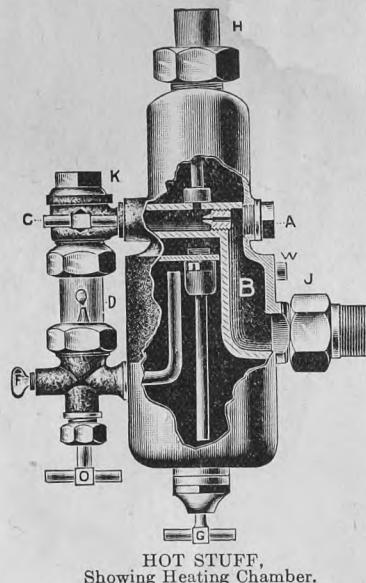
"When we reached the schoolhouse we found it packed so full that we could but just crowd in. Most everybody had brought a candle to stick up on the logs and some sprigs of evergreen and berries to make the room look New Yearsy. There were four different teachers and well-known spellers from all over the township.

"Lecta Plumb and I chose up. I got first choice and took Harriet Hepner. She was pale as death and looked nervous and frightened. Lecta took Abimelech Abers, the leading speller from the Red Haw school, and I took Cindy Patch, the best speller from Jack Oak.

"Then we chose everybody in the room who could spell at all. I think we had more than fifty on a side. We stood in long rows on both sides of the house against the wal', and, much to my disgust, I got my hair full of tallow from a dripping candle.

"We were about ready to commence spelling and everybody had become quiet when the people who sat near the door made way for someone who had come late, and in came little Sam Waitely on his crutch, with his mother behind him in a poor, thin, patched old faded calico dress and a thin cotton shawl,

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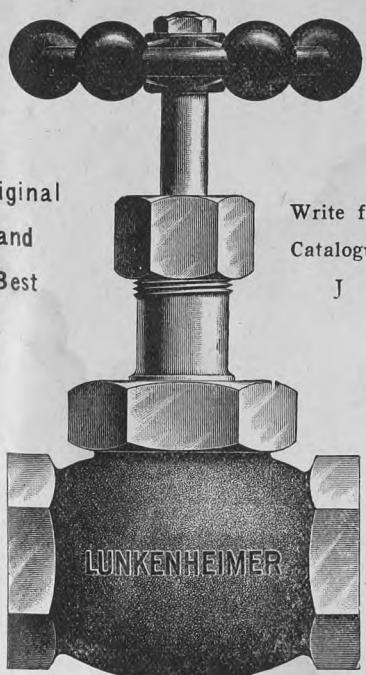
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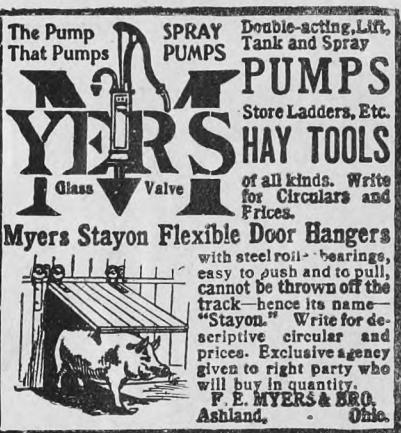
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with a faded old red hood on her head. I could see a hole worn in her shoe as she put her foot up on the stove hearth.

"Sam was then about fifteen years old, but not as tall as some boys of nine. He was very thinly dressed for such a sharp night, and they had walked fully two miles.

"I felt sorry for them and spoke up at once and took Sam on my side. It happened to be my turn to choose, and I was bound the poor fellow should not be slighted, whether he could spell or not.

"He had half a mind not to try, but I saw his mother reach out her hand and gently push him, and then he hobbled down to the end of the line and stood within a foot of his Uncle Hepner.

"Then the spelling commenced. I blush to tell it, but I actually missed the very first word given me, and that was 'mermaid.' I spelled it 'murmer.' I knew better, but I was so nervous I could not collect my thoughts. So I had to take my seat, and of course I had a little cry all to myself.

"But I nearly laughed so as to be heard all over the room when Azrael Whitehead missed 'goose.' He spelled it 'guse,' and he had told me in confidence that he half-expected to get the prize and had been studying his speller for weeks.

"Electa missed 'emanate.' She spelled it with an 'i' instead of an 'a'.

"Cindy Patch missed 'tranquillize.' I think she knew how to spell it, but she was excited because seven or eight had missed it before her. The Jack Oak scholars looked very sober when Cindy had to sit down.

"But you ought to have seen old Squire Hepner's eyes twinkle and his grim face look grimmer when Abimelech Abers, the best Red Haw scholar, missed 'phytochimy' and Harriet spelled it without hesitation. Bimelech got confused and thought the last letter was 'e' instead of 'y'.

"The Red Haw people did look mortified, and the Four Mile folks were highly pleased and showed it, too, for all the best spellers were out on both sides, and only Harriet Hepner and five or six others were left. Four of them missed 'mimaceous,' and Harriet was just going to spell it when Mis' Waitely, in a scared, timid voice that could just be heard, said:

"If you please, teacher, Sammy hasn't spelled yet.'

"Sammy stood down at the end of the line, and they had overlooked him. But the teacher replied:

"Oh, indeed! I thought he was done long ago.'

"I thought he said it sneeringly, and he gave Sammy the word in a tone that said plainly, 'You can't spell it anyway.'

"But what did Sammy do but spell it correctly without the slightest hesitation.

"Then the others who were

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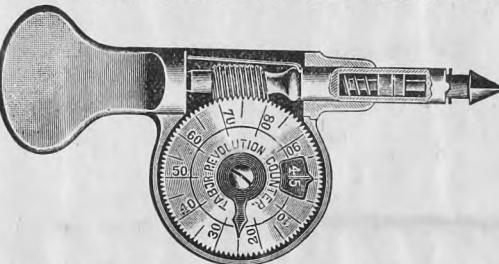
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standing missed 'dromedary,' and that left Harriet and Sammy alone. I tell you, you might have heard a pin drop then. Everybody was half crazy with excitement.

"Old Squire Hepner did not move a muscle. He had the money, five gold five dollar pieces, and a fancy purse and was to give them himself to the winner.

"It seemed to me that that poor, crippled boy got help from on high that night. I never saw anything like it. At first he was so shy that his voice almost trembled, but when he and the cousin he had never spoken to, stood up there alone and his fierce old uncle glared so contemptuously at him, the little fellow raised himself to his full height and from that moment never flinched.

"His large eyes glistened, and he threw back his head and looked boldly at his uncle and spelled the words in a loud, clear tone that fairly took people's breath away.

"His mother had quietly slipped through the crowd and taken her seat behind him, and those that sat near said she got one of his hands in hers and held it, while the tears streamed down her face.

"The two spelled against each other for a full half hour, and all the time poor Harriet was as white as a sheet, and I could see that she was trembling from head to foot.

"At last the teacher gave the word 'tyrannously.' Harriet spelled the first syllable, then stopped and stammered, looked imploringly at her father and then tremblingly went on and spelled it with one 'n.'

"How did you spell it, Harriet? Did you have only?"

"Squire Hepner had been looking on a spelling book, too. Now he turned sharply round to the master and in his hardest, coldest voice, said:

"She missed it, sir. Pass it to the next."

"Sam spelled it without hesitating an instant."

"You could have heard a pin drop in that room. It was still as death. Harriet dropped into her seat and buried her face in her hands. Squire Hepner's face never changed. Without a word he rose, reached out his long arm, beckoned to Sam to come to him and then dropped into the lad's outstretched hand the purse. Turning and facing the breathless people, he said:

"I want you all to know that I think this has been a fair and square match, and my nephew deserves the prize."

"Without further words he took his hat and marched out of the house.

"Well, the Red Haw people actually carried Sam home on their shoulders, with Mis' Waitely close behind, crying as if her heart would break with joy and nervousness. But she had on a long, warm, plaid shawl that I saw Mis' Squire Hepner throw over her as she stepped out of the door.

"One of my sisters went home

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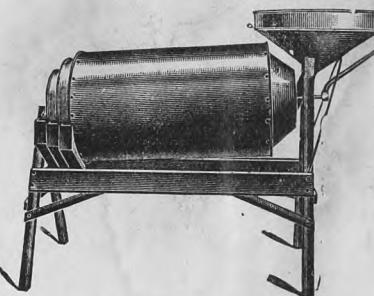
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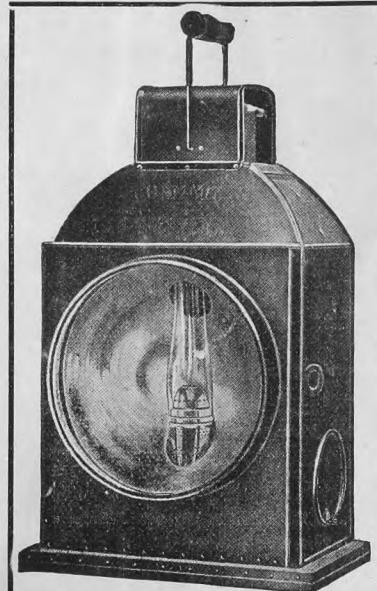
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with the Hepners that night, and she said Harriet cried all the way home and was in mortal terror at the thought of meeting her father. She stopped on the doorstep a long while, and when she did finally step into the room, trembling and fairly mourning, her father, who was sitting with his head between his hands before the fire, got up and walked over to her and actually kissed her there before them all. Then he went off to bed without a word.

"But what followed was better still. New Year's day the squire took his big sled, put in lots of hay and blankets and drove off like Nimshi himself to his sister's. No one ever knew what happened there, but it ended in Mis' Waitely and all the children going home with the squire. And a big New Year's day they had, folks said.

"The squire declared it was an honor to know a boy who could spell like Sam. They say he had that boy spell the dictionary half through that winter and nearly hugged him when he spelled correctly the longest word in it.

"The Squire was the strangest man on the subject of spelling I ever heard of. Nothing but Sam's knowing how to spell so well ever softened his heart toward his sister and her children. And nothing pleased him more than to have Sam and Harriet spell against each other for hours at a stretch."

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"Why, me loife, yer reverence; I want me money for me old age."

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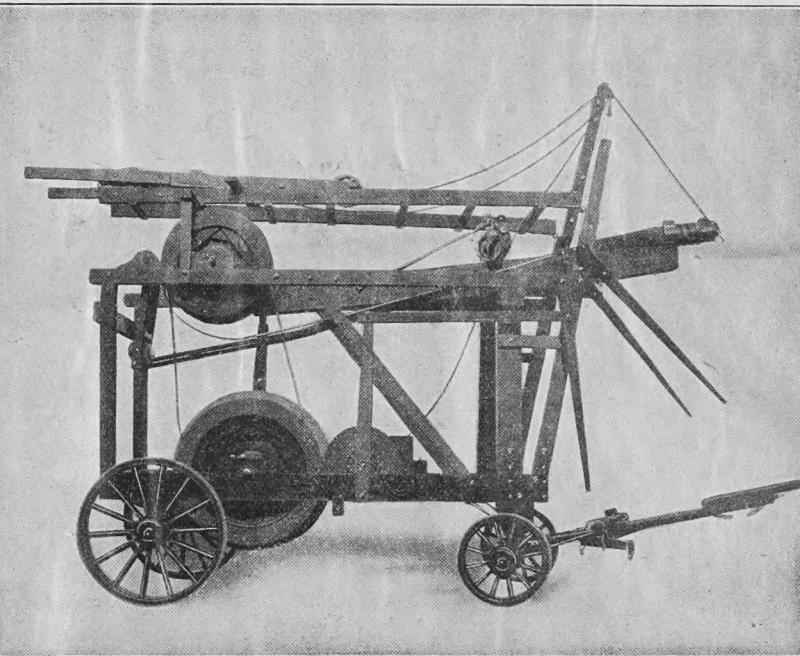
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